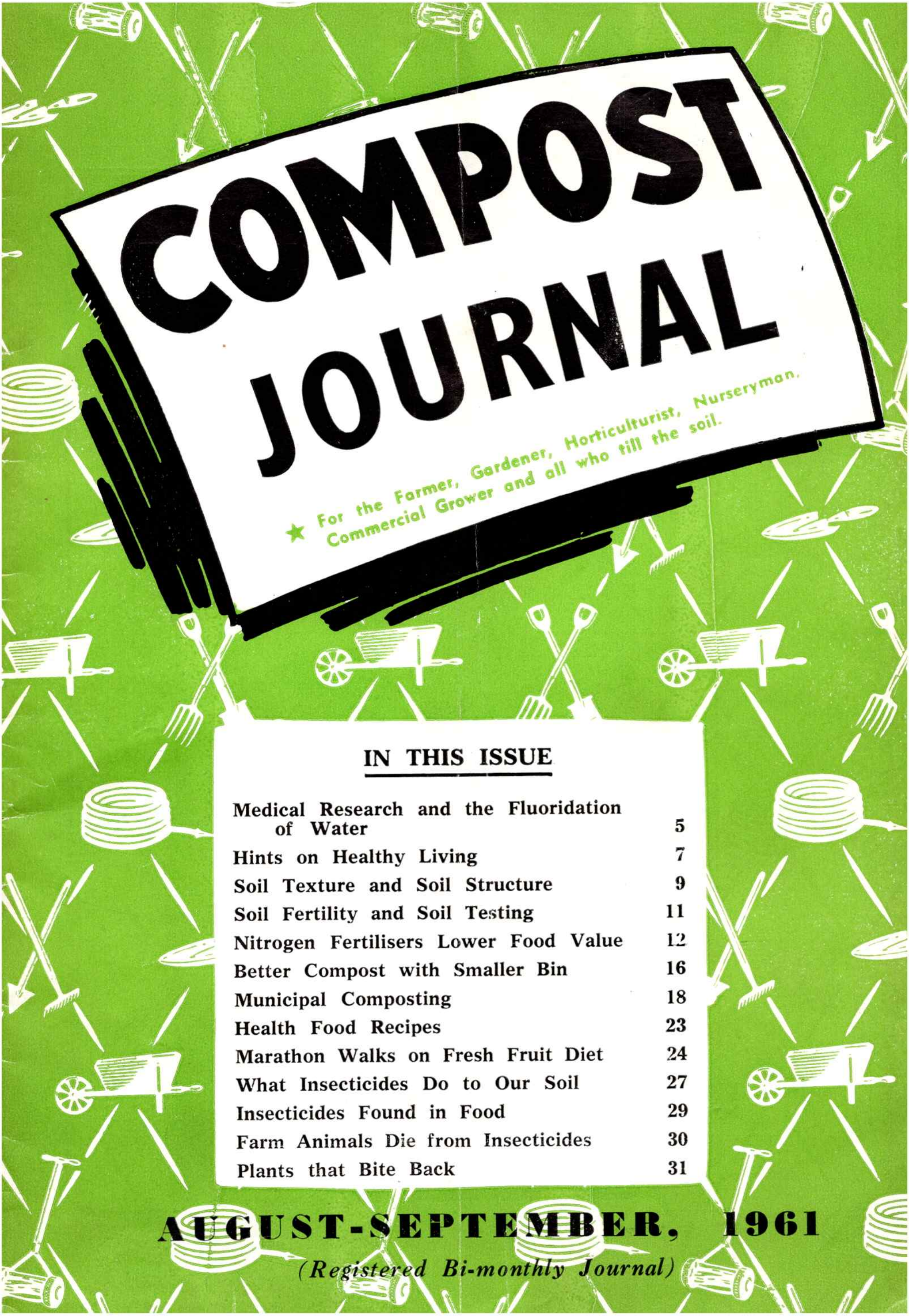


COMPOST JOURNAL

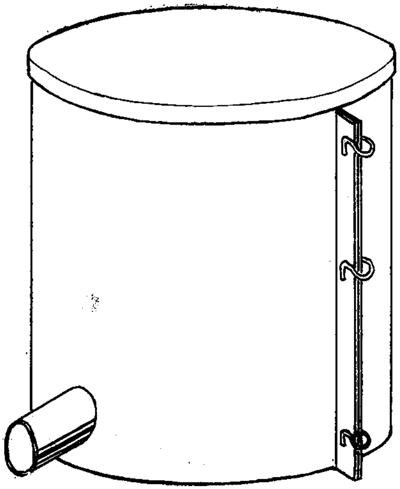
★ For the Farmer, Gardener, Horticulturist, Nurseryman, Commercial Grower and all who till the soil.

IN THIS ISSUE

Medical Research and the Fluoridation of Water 5
Hints on Healthy Living 7
Soil Texture and Soil Structure 9
Soil Fertility and Soil Testing 11
Nitrogen Fertilisers Lower Food Value 12
Better Compost with Smaller Bin 16
Municipal Composting 18
Health Food Recipes 23
Marathon Walks on Fresh Fruit Diet 24
What Insecticides Do to Our Soil 27
Insecticides Found in Food 29
Farm Animals Die from Insecticides 30
Plants that Bite Back 31

AUGUST-SEPTEMBER, 1961

(Registered Bi-monthly Journal)



THE COMPOSTER

A new development
to ensure satisfactory
dependable Compost.

The best Compost is made in ONE operation. Obtain a Composter, forget laborious turning, save time and have better results. No flies, no vermin.

★ Tested in Auckland the Composter is so simple to operate, so satisfactory in results. Easily handled, light to carry — it harmonises with surroundings.

Made of tough, durable material, long lasting.

PRICE: £10/10/- (carriage free).

Enquire from YOUR BRANCH SECRETARY or write "The Composter", c/o Green & Battenburg,
Nat. Bank Bldgs., Takapuna, Auckland.

THE COMPOSTER CAN BE AN ASSET TO YOUR GARDEN!

COMPOST THE EASY WAY—
INVEST IN A COMPOSTER TODAY

2-00

COMPOST JOURNAL

The Official Organ of the New Zealand Organic Compost Society (Incorporated) is published six times yearly and is issued free to members.

OFFICERS :

Patron:
His Excellency The Governor-General, Viscount Cobham.

Vice-Patrons:
Lady Louise Howard (Great Britain), Lady Eve Balfour (Great Britain), Sir C. Stanton Hicks (Australia), D. D. Gill, D. M. Robinson, F.N.Z.I.M., Dr. Guy Chapman (Founder), T. D. Lennie, M.B.E., A.H.R.I.H. (N.Z.), F. C. Cooper, R. L. Thornton, F.R.I.H., N.D.H. (N.Z.).

President:
W. T. Wainman, 122 Rose Street, Spreydon, Christchurch. Telephone 39-608.

Vice-Presidents: A. K. Bristow and Presidents of Branches.

Immediate Past President: R. L. Thornton (Auckland).

Auditor: L. F. Shalders, A.P.A.N.Z.

Proof Reader: H. F. Sewell. *Translator:* Mrs A. K. Bristow.

National Secretary:
R. E. Betteridge, 27 Collins Street, Christchurch. Telephone 88-400.

Editor:
Jack D. Meechin, 875 Ferry Road, Ferrymeade, Christchurch. Telephone 63-108.

BRANCH SECRETARIES :

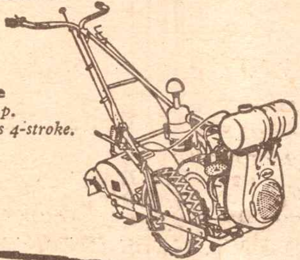
Auckland: Mrs R. L. Thornton, P.O. Box 2260, Auckland, C.1.
Blenheim: Reg Watson, 49 Dillon Point Road, Blenheim, 'phone 1491.
Canterbury: L. F. Shalders, A.P.A.N.Z., Box 828, Christchurch, 'phone 69-664.
Dannevirke: K. L. M. Cawsey, Box 4, Dannevirke.
Hamilton: A. W. Wheeler, 15 Piako Road, Claudelands, Hamilton.
Hawke's Bay: A. J. Butcher, Lyndhurst Road, Hastings.
Invercargill: G. Edmondston, 89 St. Andrew Street Invercargill.
Levin: Mrs D. Hartstonge, 26 Dudley Street, Levin, 'phone 1317.
Napier: Mrs M. Allaway, 13 Main North Road, Westshore, Napier,
Nelson: Mrs D. I. Bannister, 19 van Dieman Street, Nelson. ['phone 39-335
New Plymouth: D. Maxwell, 539 Carrington Road, 1 R.D., New Plymouth.
North Otago: W. V. Barraclough, Kakanui, 14 O, R.D. Oamaru, 'phone 477.
Otago: L. I. Paice, 32 Dornock Street, Kew, Dunedin. [Maheno
South Canterbury: C. S. Gordon, 244a Otipua Road, Timaru, 'phone 89-527,
Tauranga: J. T. D. Kaye, 53 Seventeenth Avenue, Tauranga.
Wanganui: K. L. Keir, Tayforth Road, Wanganui. [evenings.
Wellington: Mrs A. J. Bristow, 58 Bassett Road, Johnsonville, 'phone 74-411
Upper Hutt: W. T. May, 18 Ngata Grove, Trentham, 'phone 3727 UH.

Full particulars and form of application for membership may be obtained from any of the above Branch Secretaries.

ANNUAL SUBSCRIPTION :

ENDOWMENT MEMBER £1, ORDINARY MEMBER 10/-.

MECHANISED GARDENING
now within YOUR reach!



Engine
2.95 h.p.
Villiers 4-stroke.

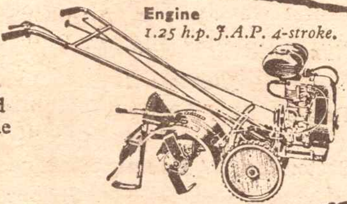
'Bantam'

The sturdy little Howard Rotavator 'Bantam' will dig to a depth of up to 8″ at walking pace in most types of soil. A truly versatile handyman. Wide range of implements available.

'Bullfinch'

A true Rotavator, well capable of handling all your digging and hoeing. Puts freedom from spade and fork well within reach.

Engine
1.25 h.p. J.A.P. 4-stroke.



HOWARD
ROTAVATOR.

For Demonstration Consult the Authorised Canterbury Dealer . . .

A. R. MACKAY LIMITED
33-39 Lichfield Street, Christchurch, C.1.

Licensed Dealers for . . .

HUMBER, PLYMOUTH, SUNBEAM CARS
COMMER-KARRIER TRUCKS, DAVID BROWN TRACTORS

COMPOST JOURNAL

Vol. 20, No. 4 *Twentieth Year of Publication* Aug. - Sept. 1961

Editorial

The Haughley Experiment—An Appeal

At Haughley in England there is being conducted an experiment which is not only unique but the only one of its kind in the world. Under the sponsorship of the Soil Assn. of Gt. Britain a large farm has been subdivided and three systems of husbandry are being carried out. There is the Organic section with Compost and animal manures; the mixed section similarly cropped but run on more orthodox lines, using both animal manures and chemical fertilisers, and lastly the stockless section in which chemical manures and crop residues are added to the soil.

Dr. R. F. Milton, a scientist of international repute, is collating the findings and conducting exhaustive tests into all aspects of soil and animal health, food output and quality, etc.

The total cost has been borne by members of the Soil Assn. and donations, but no support has been forthcoming from Government Departments or grants received from outside sources.

Dealing with results to date, Lord Bradford, President, says:

"We have learned far more about the basis of soil nutrition, and in particular about the fallibility of the orthodox soil analysis than ever known before. . . . Haughley's existence is now seriously threatened and further research on biological and ecological lines would be impossible. I absolutely refuse to envisage this — I hope you do too."

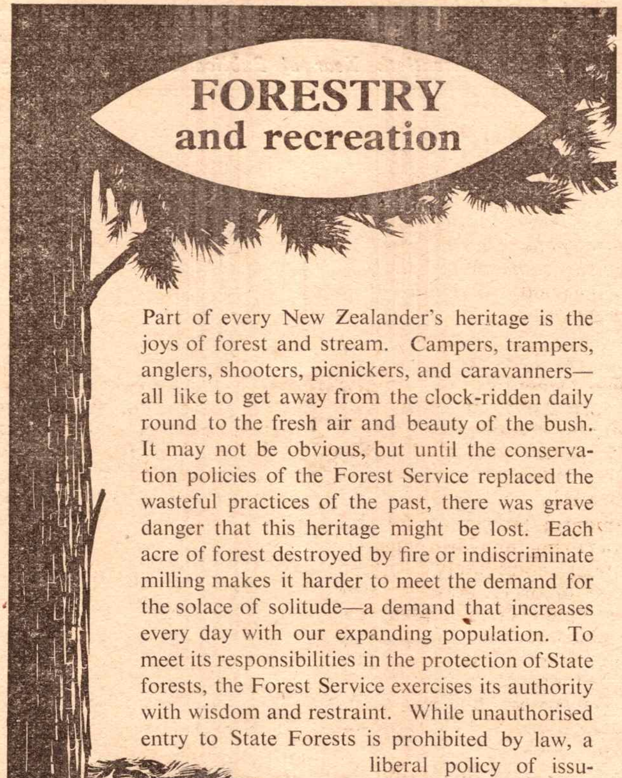
The sum of £19,250 is required over the next three years to repay existing loans and maintain operations, and it is here that we in N.Z. should be able to help.

All members of the Compost Society are asked to either send a donation (large or small) or join the Soil Assn., or both. All Branches are asked to join and make a donation too. These may be sent to our National Secretary who will issue a receipt and forward the amounts.

The time for giving is now—tomorrow may be too late!

The National Council has agreed to make a donation and the Canterbury Branch has signified its intention to join. The annual subscription is £3.

JACK D. MEECHIN, Editor.



FORESTRY
and recreation

Part of every New Zealander's heritage is the joys of forest and stream. Campers, trampers, anglers, shooters, picnickers, and caravanners—all like to get away from the clock-ridden daily round to the fresh air and beauty of the bush. It may not be obvious, but until the conservation policies of the Forest Service replaced the wasteful practices of the past, there was grave danger that this heritage might be lost. Each acre of forest destroyed by fire or indiscriminate milling makes it harder to meet the demand for the solace of solitude—a demand that increases every day with our expanding population. To meet its responsibilities in the protection of State forests, the Forest Service exercises its authority with wisdom and restraint. While unauthorised entry to State Forests is prohibited by law, a liberal policy of issuing permits enables organised groups and individuals to make extensive use of these popular playgrounds for recreational purposes.

Forestry is forever

N.Z. FOREST SERVICE

Issued in the interests of forest protection
by The New Zealand Forest Service.

3846

MEDICAL RESEARCH and the FLUORIDATION OF WATER

By B. Cooke, L.D.S. (Manch.) F.R.I.P.H.H., F.R.H.S.

Despite a reduction in the incidence of certain "diseases" by immunisation, innoculation and Public Health measures, the medical approach to most morbid conditions of the body is empirical and piecemeal.

Medical research is too specialised as an affair of the laboratory and the highly trained scientist of limited field. It is preferred to study the recondite and the complicated factors of pathology than to consider the more readily appreciated circumstances of health.

The fundamental laws of biological phenomena occuring in Nature generally are almost completely ignored and there is divorce between the multitudinous fields of biological research. In consequence there is a great wastage of time, talent and finances as each facet of enquiry is, to all practical purposes, oblivious of its neighbours and there is no hesitation in passing the buck.

The scientist is so trained that he is quite prepared to believe, that what he does not see, does not exist. There is an urgent need for a strong broad mind to correlate findings.

THREE MAIN ANGLES

Dental morbidity may be considered from three main angles.

Firstly, it reflects, as does any other morbid condition, the inherited propensities of the individual and it is a measure of their conversion into characters by his total environment of which diet plays the most important part.

Secondly, the sophisticated, mutilated and denatured form of a modern diet has led to reduced function of the dental apparatus and this alone tends towards its atrophy and microbic solution.

We are indebted to the Editor of "The Dental Magazine and Oral Topics," J. Clark Yoeman, L.D.S., for permission to reproduce this article.

Thirdly, the microbic population of the mouth, while generally being regarded and treated in the role of the wicked uncle, is a natural phenomena whose function is to help decompose food particles left in the mouth after a meal and to assist the oral fluids to remove them. No mouth is sterile after birth and as to whether this mixed microbic population will be symbolic as in dental health, or parasitic as in dental morbidity, depends on many factors.

IMPORTANCE OF DIET

A good diet influences the structure of the dental tissues via the blood stream and also regulates the quality of the defence mechanisms of the oral secretions within the limits of the individuals inherited propensities.

The debris left after a meal on the teeth and gums is so refined and denatured in a civilised country that it is deficient in food factors necessary to the resident microbes to enable them to make full use of the predominantly energy food deposits, and they are forced to compete with the already out of tone dental structures for their integrity in their search for these factors.

In behaving thus, the mixed microbic population of the mouth simulates other population relationships throughout nature. This approach has been placed before the dental profession

MEDICAL RESEARCH and the FLUORIDATION OF WATER

(from previous page)

for more than a decade but, so far, there is no evidence that it has been acted upon.

EFFECTS OF FERTILISERS

The medical profession, of which dentistry is a specialised part, knows comparatively little concerning the influence of elements added to human diet as "artificial fertilisers". Not a great deal has been done concerning their effects on animals and we owe most of our knowledge to a consideration of their effects on the relationship between plants and soil.

> *Seldom, if ever, is there a deficiency of one element alone, and the availability to the plant of those present in the soil depends on many factors, including acidity, temperature, sunlight, humidity, "nutrient ratios" of other elements and the presence of organic colloids in optimum amounts.*

Investigations have shown that some elements can take the place of others in the economies of living organisms, as, for example, is the case of nitrogen fixing organism azotabacter in which tungsten will, to some extent, replace metabolic requirements for molybdenum.

NATURAL FLUORINE

To return to humans. It is found that the waters supplying the towns of Bonn and Rheims are of a calcareous nature containing traces of vanadium, strontium and fluorine — *the fluorine being less than half* that is said to be necessary to reduce caries, yet the degree of dental morbidity in these towns *is less* than that claimed by those who advocate the introduction of fluorine into water supplies. Again, in these towns, white bread has a much less deleterious effect than has a similar loaf on the populations of the Scandinavian countries where the water supply is not so favourable to dental health.

Fluorine in water acts essentially via the body chemistry on tooth structure, particularly if it is ingested during the period of tooth formation. It is difficult to concede that it is not present already in foods in amounts sufficient for metabolic needs.

> *There is every reason to believe, and none to doubt, that it is present but unavailable as a result of the fertiliser treatments of the soil, the use of poisonous sprays on crops, the sophistication and denaturing and preservation of food, and the use of Public Health measures as in water "purification". Then again, it is just as likely that the influence of fluorine would be neglible under the circumstances of a less sophisticated diet.*

The application of artificial fertilisers to soil is fraught with difficulties as it "locks up" some elements while assisting excessive absorbtion by the plant of others. Another serious effect is the destruction of organic colloid on which delicate living processes depend if they are to function normally.

Experiments on animals given free choice between foods grown organically and those grown with the aid of fertilisers show that they go, almost 100 per cent for the former. The late Sir Albert Howard showed that good farming is reflected in freedom of diseases of plants and animals and that it can only be achieved by effective humus treatment. Prevention is most satisfactorily brought about by tuning up agricultural practice.

Under the circumstances of the sophisticated diet of civilisation, there is such a divergence from the biochemical relationships found in natural uncooked foods that physiological urges must of necessity arise for nutritional factors that would otherwise be ignored, in an endeavour to cope with the changed metabolic situation so brought about. In this context the inhabitants of the U.S.A. have been described as the best fed and the worst nourished people in the world.

(please turn to page 22)

We are what we eat?

Hints on Healthy Living

This Journal has consistently emphasised the link between the health of the soil and the nutritional value of the plants grown in such soil. We are what we eat! It was refreshing to hear recently an address given to members of the Canterbury Branch by Miss O. Roscoe of Christchurch, in which she dealt with nutrition and gave hints on healthy living.

Miss Roscoe, in her opening remarks, stated that people were becoming more health conscious and they realised that healing came from within the body, and not from pills and medicines which although they gave relief, did not treat the cause.

The great cause of sickness was disobedience to natural law, and the wrong manner of living. People should turn from wrong habits of eating and adopt healthy habits in regard to exercise, sunlight, fresh air, proper rest, relaxation and deep breathing. At present many people lived on excessive quantities of cooked and denatured foods, whereas they should rely as far as possible on a moderate amount of fresh raw foods in their natural state. If this was done, said Miss Roscoe, people would find that their health would be maintained at a high level with a far greater immunity from infection.

This meant a certain amount of self denial and discipline but it would be worth while and the choice was for the individual to make. Obedience to Nature's laws brought its own rewards.

Dealing with rules for health, Miss Roscoe stated that food was all important but we must not lose sight of the fact that right thinking, exercise, rest, sunlight and fresh air all played their part too.

The correct diet was necessary if people were to have a healthy blood stream because disorder and disease would not exist there. The fault lay chiefly in over-indulgence in devitalised and refined foods, excessive starches, white sugar, white flour and insufficient fresh fruits and vegetables. The remedy lay in a change to fresh fruits of all varieties, some dried fruits, and fresh vegetables, as many as possible uncooked. Cereals and dairy products must be in moderation and unrefined. Instead of meat, which was not a good protein, we should use cheese, nuts, soya beans, fish and eggs. Milk was mucous forming and chocolate and sweets not recommended.

The ideal to aim at, said Miss Roscoe, was an 80/20 balance. That meant 80 per cent of the food eaten should be alkaline and 20 per cent acid forming foods.

(Next page please)

◆ ◆ ◆

Quality

APPLES

Compost Grown

North Island enquiries only.

For prices and varieties

apply

J. HOWARD PAYNTER
R.D. 2, HASTINGS

HINTS ON HEALTHY LIVING

(From previous page)

A suggested daily routine was:

On rising, a weak lemon drink which could be sweetened with honey. Half an hour later a fruit breakfast. Instead of morning tea, a fruit drink or fruit, or soup (Potassium broth). Lunch should comprise salad and fruit or wholemeal bread. Dinner could be four vegetables and a protein, raw fruit in season or stewed fruit sweetened with honey or brown sugar. For prepared lunches the speaker suggested wholemeal bread or soya loaf, raisins, nuts and mint, lettuce and marmite, marmite and nuts, cheese and parsley, lettuce and cheese, eggs and chives, lettuce and pineapple, lettuce and egg, cold nut roast, cheese and pineapple, mock chicken, peanut butter and raisins, a whole tomato, fruit and apples. These of course may be grouped in almost any combination.

To regain dependable health there were four essentials to maintain:

Sensible feeding, healthy habits, emotional control, mind regulation.

To change over to such a health regime people must be prepared for some upsets at first. There may be headaches, body aches or weakness. They were good signs and served to show that the body is being cleansed. If food is to have the best results it is essential to have the correct mental attitude towards it, to enable emotions, nerves and glands to co-operate in the healing processes of the body.

We are not only what we eat, but what we think and speak, concluded Miss Roscoe.

Miss Roscoe gave a demonstration using the juice extractor and members sampled some of the drinks produced. Tastefully arranged menus for breakfast, luncheon and an evening meal excited much comment.

On another page will be found recipes supplied by Miss Roscoe.

—Editor.

DID YOU KNOW?

HISLOP'S STONEGROUND FLOUR is COMPOST GROWN on land free from chemical fertilisers, untouched with hormone sprays, mercury dustings, or D.D.T., etc.

Guaranteed free from Bromate or any other improvers.

£1 for 25lb bag posted anywhere in N.Z.

Cash with orders please.

A. A. HISLOP,
Puketa, Kaikoura.

DIET OF FRESH RAW FRUIT

Russian research workers report that an exclusive diet of raw apples was effective treatment for 85 per cent of high blood pressure patients.

—They were given 6 meals a day —9 ounces of fruit at each meal . . . —"Organic Gardening and Farming."

Mention
COMPOST MAGAZINE
when writing to advertisers
it helps them . . .
helps you
and helps us!

SOIL STRUCTURE and SOIL TEXTURE

What is the difference between soil "structure" and soil "texture"? These terms often used are confusing to gardeners and here from "Mother Earth" is an explanation of the terms.

"Structure" is to be distinguished from "texture", which refers to the size of the particles making up a soil —sand, clay, silt, etc. "Structure" describes the way in which these particles are built up into crumbs of various sizes up to about one-eighth of an inch in diameter. Each of these tiny crumbs is almost a complete miniature of the soil itself in which it is found.

This crumb structure is especially marked in grassland, and it is generally concluded that "roots do something which makes the soil particles unite". An important feature of these crumbs is that they can stand up to the power of falling water, so that a soil in which they are frequent can be cultivated over a wide range of moisture content. They are "water stable". Soils with good structure form good seedbeds, allow the movement of air in the soil, and stand up better to drought. They are one of the most important signs of "fertility" in a soil.

Recently much scientific work has been done to find out how crumbs form, but the picture is still far from complete. Some cementing material is necessary, and several of these have been seen under the electron microscope. The cement was round the soil particles, and not in the form of a capsule round the crumbs itself. Because there are most crumbs in old grassland, where dead roots and leaves are continuously being mingled with the soil, it was reasoned that there was some parallel between crumb formation and the accumulation of organic matter. It was thought that this relationship was due to the work of the soil micro-organisms; but even quite recently, Sir John Russell has observed that "their direct action does not seem to be very marked".

Mr John Leigh tried many known methods of assessing soil fertility, such as the total number of soil micro-organisms (estimated by counting colonies on agar culture plates), by measuring the uptake of oxygen by the organisms, by measuring their output of carbon dioxide, by measuring the enzymes they produced, and by determining the percentage of crumbs in the soil. Most of these recognised methods suggested that the plots receiving 500lbs of sulphate of amonnia each year were less fertile than plots receiving only 100lbs, and no better, if not less fertile, than the controls. These results came as a shock, and it was decided to spend another year in measuring soil fertility.

WORTHY OF THOUGHT

Artificial man is producing artificial food and artificial food is producing disease.

We people of civilization are too frightened of simplicity and too dependent on technique.

We must regard as harmful every unnecessary X-ray examination.

Trace elements are best given in the form of organic substances.

Truth is the victim of the chemical situation.

We must, said a physician, use our brains when we treat people. We must think and not react to our textbooks.

We must not use medicines which are too strong for the human body . . . nor chemicals in the soil which are too strong for the soil. . . It is high time that the chemist and the farmer were enlightened about all these things.

—Doris Grant reporting on the fifth International Conference on Nutrition in "Mother Earth."

EVERY LIVING THING IN YOUR SOIL NEEDS SEAWEED

Maxicrop Liquified Seaweed

THREE IN ONE

PLANT FOOD — SOIL CONDITIONER — LEAF SPRAY

Long employed in bulk by agriculturists all over the world. Now available at your Seedsman.

By an exclusive process MAXICROP contains the whole nutritious content of seaweed.

Every crop removes from your soil minerals present in minute quantities, these being essential to plant health.

MAXICROP frees trapped minerals, adding its own organic riches of trace elements, plant hormones and alginate-like substances. These natural growth stimulants are factors needed for a plant's healthy growth and abundant yields.

MAXICROP increases resistance to pests and diseases, encourages root formation and is entirely safe.

TRY MAXICROP NOW

Represented in New Zealand by

R. A. BELL-BOOTH & CO.,
P.O. Box 39, Johnsonville, Wellington.

TREPEX

The purely Organic Compost Activator

TREPEX

FASTEST and MOST ECONOMICAL Composter on the market. A 2/- packet will make 2 tons of Compost in only six weeks
WITHOUT TURNING ! !

TREPEX

Makes 40 gallons liquid fertiliser from a 2/- packet.

Made and packed in England—Wholesale Distributor:

R. GREEN LIMITED, 6 Boulcott Street, Wellington.
L. A. GRIFFITHS LTD., Auckland.

☆ ASK YOUR SEEDSMAN FOR TREPEX ☆

Soil Testing and Soil Fertility

by The Editor

Some time ago in this journal mention was made of the work performed by Dr. Milton, a scientist at the Haughley Research Farms in England. Dr. Milton, in that article, mentioned the fallacy of Soil Testing. From time to time members in the Compost Society are faced with the question of whether or not a soil analysis can be recommended. I had an enquiry recently and this is how I dealt with it.

"The fallacy of soil testing has been proved by Dr. Milton of the Haughley Experimental Farm in England when he found that soil analysis taken from the same ground at different times of the year gave completely different readings. In other words a sample taken in the spring when the flush of growth is on and the bacteria and soil fungi etc. were busy, gave a different reading to that taken when the soil life was almost dormant in the late autumn or early winter. A soil test does not reveal what the soil CONTAINS but only what is AVAILABLE as plant food, and there is a big difference. Most soils are not lacking in the essential elements, soils may be short of some of the trace elements because they may not be in a form available to the plants as food, in other words they are there but in LOCKED UP form. The answer there is to build up the humus or organic matter in the soil and the soil life release the essential elements so that plants can use them, they become soluble. I could give you instances of this.

"You do not say whether you are a gardener or on a farm. If the former the application of all your wastes and what you can obtain from outside applied direct to the soil or in the form of Compost will solve any apparent deficiences. Remember that five per cent of your plant nutrients come from the soil, the other 95 per cent comes from the sun, air and rain. If however you are farming—I hope mixed farming — for any type of monoculture leads to all sorts of difficulties. If you are mixed farming then you can use the four year leys and cropping rotation as well as utilising your stock excreta and deep rooting herbs and grasses. Further information can be obtained from Friend Sykes' recent book 'Modern Humus and The Farmer'. This is an ideal publication, written by a world-renowned organic farmer who is retained as farm consultant to farms as far away from England as Portugal.

"There are those who will take a sample of your soil and tell you the then reading and what to add to it to bring it up to what they consider essential for any given crop, but continued applications of artificial manures or stimulants (that is all they are) will not help you much. If you follow this policy it means you are living off your capital whereas in actual fact you should be living off the interest with the capital intact and growing as your soil fertility increases with wise husbandry.

"If you are farming try and obtain some books on organic farming from the Country Library Service. Friend Sykes has written several books and F. Newman Turner some very good ones."

> *"I believe that 'away from the soil the soul of man dies'. Any community in which a considerable proportion of its citizens has lost contact with the soil must lose something of incalculable importance and its decline—as measured in œsthetic, cultural, artistic and social values as well as in material productivity—can only be a matter of time."*
>
> —S. A. La Roche, retiring Chief Agricultural Instructor for the Canterbury Education Board.

HIGH NITROGEN FERTILISERS LOWER FORAGE FOOD VALUE

Evidence keeps mounting which shows that high-nitrogen fertilisation and high-quality crops don't go together. Over the past 20 years the protein content of our nation's major grains—wheat especially—has dropped continuously. Dr. William A. Albrecht, at the time head of the University of Missouri's Department of Agronomy, called attention to this more than ten years ago, emphasising that a decline of ten per cent in wheat protein had been found within a single decade. Corn, too, has skidded downwards as much as 50 per cent in the amount of protein it contains.

Fertilisers that provide quickly soluble nitrogen will lower the capacity of these crops, hybrid corn in particular, to produce seeds with high-protein content. That is the way leading agricultural scientists put it.

Now, there's new evidence—and it's important to know about.

According to a Colorado State University livestock expert, nitrogen fertilisation of forages used as pasture or hay will decrease the nutritional value of the feed. Dr. C. D. Story, associate animal husbandman with the Colorado Agricultural Experiment Station, said research at two other universities confirmed Colorado State University studies that animals fed nitrogen-fertilised hay do not make as high gains as those fed unfertilised hay.

Dr. Story reported results of five experiments comparing fertilised and non-fertilised hays. Cattle fed hay not grown with quick-soluble nitrogen fertilisers consistently outgained the others, he said. In one 255-day test, cattle fed the non-fertilised hay averaged 80 pounds more than those fed the nitrogen hay.

Tests Show Falling Off In Returns

Tests at both the University of Tennessee and the University of Minnesota showed similar results. Total production value per acre at Minnesota was almost ten dollars lower using the commercially fertilised hay,

WATTIE'S fresh Frozen and Canned Foods, Fruits and Vegetables, are all grown in New Zealand's richest natural garden, Hastings and Gisborne.

Healthful, Economical; ask for

WATTIES

despite increased beef production. In the Tennessee experiments, high-nitrogen-fertilised pastures actually wound up showing a loss of $4.43 per acre after costs were deducted. Moreover, researchers said the cattle from these pastures had a rough appearance and less finish.

> *"I am not recommending that fertilisation practices be discontinued," Dr. Story pointed out, but ranchers should realise that the nutritional value of fertilised forages is sacrificed. There is some factor in nitrogen-fertilised hay that depresses bacterial fermentation."*

The research goal at C.S.U., he added, is to find this inhibitor and to correct it by "proper fertilisation," curing or storage practices, or by supplementation if needed.

"In view of the tremendous increase in the use of nitrogen fertiliser on not only hay and pasture crops, but also on grain crops, we feel this problem may have many implications," Dr. Story emphasised.

Implications Are Serious

Indeed it does have many implications—and they are not the sort to be taken lightly. If shot-in-the-arm chemical methods are cutting the nutritional value of animal feed (animals that are to provide the meat supply for most of our population, incidentally), and simultaneously adding to the farmer's production costs, more than the soil is out of balance. The only ones who benefit are the commercial fertiliser companies—and that's an unsound agricultural economy indeed.

What's the point in growing more hay—or more anything—if the quality is poorer and the cost is higher?

Furthermore, what of other crops besides hay and forage—crops to feed people as well as livestock? These, too, have had quality sacrificed to quantity. Yes, it's time to correct the problem by "proper fertilisation" as the report puts it—by natural fertilisation, as we put it!

—"Organic Gardening & Farming"

"I only farm as much as my animals can keep fertile and productive. The man that farms a single acre more than he can keep in top shape is fooling himself, wasting his time, and throwing away good cash in seed, tractor gas and equipment. Quality and quantity seldom go hand in hand."

—A U.S.A. Organic Farmer.

MUCK IS MORE THAN A FERTILISER

What 90 per cent of farmers do not understand is that muck should not be regarded as a fertiliser. Of course, it does contain a certain percentage of N.P.K. (which incidentally adds to its immediate chemical value) but its real value consists of the fact that it is either humus itself, or the agency of humus, and that its content of millions of vigorous bacterial life re-invigorates the existing bacterial life of the soil, the unpaid labour force of the farm, and since their job is to break up the particles and complexities of the minerals of the soil, making them available as plant food, the more living and active you can make the soil the greater will be the supply of minerals and trace elements available as plant food.

It is not, therefore, a mere matter of comparing N.P.K. content of muck with that of an artificial dressing. There is no comparison possible, for the work of the two agencies is so little alike, in fact greatly dissimilar.

—Friend Sykes in "Modern Humus Farming".

EXTRA PAGES

This and subsequent issues of the "Compost Journal" will contain 40 pages — 4 more than previously.

Compost Essential In Tropics

by Mrs E. T. LANE, Brisbane

The author of this article is one of our overseas members who resides in Brisbane, Queensland, Australia. In a letter Mrs Lane describes what Compost has meant to her garden. She writes:

I can't give you much information about Composting in the tropics, as all I have learned about it is from your little magazine. My husband and I have a fair-sized garden, and we are both fond of gardening.

Difficulties

Brisbane is not really tropical, but it is very hard to grow vegetables here in the summer. Our soil is very sandy and the heat in the summer burns and withers the plants in their young stage, at least it did until we started to put Compost on top of the soil around the plants. The dark Compost does not hold the heat like the light sandy soil, and now we are able to grow cabbages, lettuce, tomatoes, etc., all through summer.

Water is another of our problems here, as the rainfall is very patchy, and we are not allowed to use sprinklers from the town water supply. We found that the soil kept moist under the Compost and reduced our watering time.

The winter is our best growing time for most of the green vegetables, but we have to contend with all the pests imaginable—bean flies, cabbage moths and various kinds of bugs—nearly all the year round. I have noticed this winter that although the cabbage moths still fly about, our cabbages haven't been eaten half as much as in other years. I am wondering if the Compost has made any difference. I haven't used any sprays or dusts, as I don't like the idea of poisons on the vegetables. I think it would certainly require more Compost in the tropics and semi-tropical climate like Brisbane, with the heat and humidity—it seems to dry the goodness out of the ground.

N.Z. Envied

I had forgotten how green the grass could be until we visited New Zealand two years ago; here one can go hundreds of miles and see nothing but brown grass and half-dead gum trees. We were amazed to see such vivid green grass wherever we went in New Zealand.

I have no hesitation in saying that Composting is the best thing we have ever done for our garden. I look forward to each copy of the magazine, as there seems to be something new to learn from it each time.

No Artificials

I may say that we never use artificial fertilizers now. We have a few fowls, and the manure helps the Compost bins along. I also add Q.R. Herbal Compost maker to it and in 3 or 4 months we have all that we require. We have large bins in the making all the time. The weeds grow prolifically here, although it's so hard to grow the cultivated things, so we always have plenty of material for the Compost.

NATIONAL COUNCIL DELEGATES

Delegates to the National Council were appointed at the Conference to represent the following Branches:

Otago, Upper Hutt and Auckland, Mr H. F. Sewell; Blenheim, Mr R. E. Betteridge; Oamaru and Levin, Mr J. Burrows; Nelson, Mr J. Thompson; Canterbury, Mr J. P. Whitelaw; Hawkes Bay and Napier, Mr E. J. Cross; Wellington, Mr Wainman; Wanganui, Mr L. C. Waters.

STONEGROUND WHOLEWHEAT

Auckland members are advised that supplies of organically grown wholemeal stoneground by Mr Hislop can be obtained at the Health Food Centre, 49 Karangahape Road, Auckland.

THE PHILOSOPHY OF COMPOST

by F. C. COOPER

In his opening address to the Compost Society's Conference in Auckland on 14th May last, His Worship the Mayor, Mr D. M. Robinson, a past president of the Society, an honorary life member and a vice-patron, made use of what I think is an entirely new expression and which seems to give food for thought. He spoke of Compost Philosophy. Could that mean a different outlook on and conception of the Compost question?

Firstly, what is Philosophy? My dictionary defines it as "Love of wisdom" and a philosopher as one who searches for the rules of and reasons for the laws of nature and our relationships thereto.

Keeping this in mind I think Mr Robinson's expression is very apt. Is not the basic idea of the organic Compost movement, an attempt to understand the rules and laws of mental and physical health?

Our society's slogan, "Healthy Soil, Healthy Food, Healthy People" goes to the root of the matter and brings us face to face with one of the newest studies just opened up—Ecology—the close inter-relationship of all things, one to the other.

In advocating Composting to home gardeners, market gardeners and municipalities, this can be kept in mind. The dire necessity of living within the fundamental law of nature means that **all residues** from life of any description, plant, animal and human, must go back to mother earth, if health is to be maintained.

The philosophical approach to this, I think, must be unhurried. We have been a long time getting to our present favourable position, and are always collecting more evidence in support of our philosophy.

I suggest that a good work for someone to undertake is the compilation of a record of the progress of the organic movement up to date, covering garden successes, stock and animal research and experiments in human nutrition. This evidence, collated and in easily available form, would be of great value to many enthusiasts.

A very extensive range of such evidence could be contained in a brochure about the size of "The Composters' Guide", edited in sections for easy reference and easily carried when on propaganda sorties.

NOW AVAILABLE

GOLDEN GLORY

THE **QUALITY GRAPEFRUIT**

Organically grown by

L. SHARP, OTUMOETAI, R.D. 4, TAURANGA

South Island Rail-Air-Rail **33/6**

North Island Rail **26/-**

Satisfaction Assured.

For the new member

BETTER COMPOST with a SMALLER BIN

by Dr Guy B. Chapman, D.D.S. (Penn), L.D.S., L.R.C.S. (Edin)

The principles advocated by the N.Z. Organic Compost Society are so sound and appealing that the practice of Compost making should by now be much more widely spread. Enthusiasts all over N.Z. keep preaching the doctrine of a healthy soil, healthy plants, healthy animals, healthy man; but only a small percentage of the population is actually making and using Compost.

Many people are breaking vital rules and their end product, though to a degree useful, is not a true Compost.

I have given a lot of thought to the why's and wherefore's of this position and now submit for my readers' criticism, my conclusions.

It appears obvious that those who have used good Compost and seen the results are our best sales people. I have never yet met anyone who has used a properly-made Compost that is not on our side.

I believe our appeal has not reached the possible numbers of potential makers and users, because the technique we have advocated has too many loopholes for failure.

No object can be produced satisfactorily without a careful technique, one that will simplify production to the last degree, cutting costs and labour to a minimum.

We have in the past, as a Society, demonstrated the making of thousands of heaps, pits, and boxes in open air meetings and even in halls. The box we have so often advocated is what is known all over the world as the N.Z. box, roughly 3ft. x 3ft. x 3ft., this box takes quite a lot of material. When demonstrations are held, material has been collected beforehand, free labour is available, and the boxes are completed in ONE operation. The results have been as nearly perfect as possible. Onlookers are thrilled and go home determined to get on with the box and making the lovely sweet smelling Compost they need.

The first hurdle run into is the shortage of vegetable matter. It is only too often one to two months before the box is full, and we have smell, flies and sogginess. Mixtures that were heating up nicely have been cooled by the addition of cold material, in fact, the process as practised in only too many households is faulty at all points. Turning is then a necessity. This entails hard work, for the

"Healthy Life"

Published bi-monthly in Feb., April, June, Aug., Oct. and Dec.

Price 1/6 (postage 2d). Annual Subscription 10/- (includes postage).

"Healthy Life" is an informative and attractive magazine dealing with all aspects of health—especially with our own health problems in New Zealand. Send for a copy today, or forward your subscription to the Secretary,

"HEALTHY LIFE",
123 Ponsonby Road, Auckland, W.1.

average woman who only too often, I find, is the gardener. If the turning is neglected the box remains until a rotted mass results, bearing little relation to the ideal Compost expected.

The first week in Compost making is of vital importance. In "The Living Soil", by Lady Eve Balfour, she says: "It is believed that the chemical changes brought about during the first week of Composting are of critical importance in determining the value of the final product."

How possibly could a box which took say even a month to complete meet this vital first week requirement?

Can these obstacles to the easy faultless making of Compost be overcome. I believe they can. To fully popularise the making of Compost a few things are necessary:

1. Simplicity in technique.
2. Reduction of labour.
3. Appearance.
4. Elimination of snags.

I suggest that in future the Society's policy should advocate smaller containers for Compost making, and that we specify certain sizes, and that the height in relation to the cubic content be roughly 2ft. x 2ft. x 4ft. in height, with a cubic content of six cubic feet.

After five years of testing I am convinced that provided the proportions of the container are close to the dimensions mentioned, and provided proper Composting principles are adhered to, almost perfect Compost can be made.

Other points are: The material the container is made of, should preferably be a non-conductor of heat and cold, be light enough for ease of handling, strong and lasting and neat in appearance. Some system of easy dismantling is a decided advantage, and the container must have a lid or top to keep heat in and keep rain out.

A collector is needed. This can be any shape or of any material provided it has a properly tight fitting lid, and a capacity of about 8 cubic feet. An ordinary box with a tight lid will serve (paint it).

TECHNIQUE

As material comes to hand the householder fills the collector; household refuse should be covered as much as possible with leaves, grass or sawdust. Keep the lid always in place. If twiggy material is collected, cut into short lengths. Grass cuttings should be withered before putting in collector. When collector is full, Composting proper starts.

The Composter is filled in one operation. First, rough material, then vegetable and other organic wastes to say twelve or fifteen inches, are put into the Composter, then two inches of preferably some animal manure, or if not available, then a dusting of dried blood, or blood and bone. Wet until the consistency of a squeezed sponge is attained. Sprinkle with earth and REPEAT. This will carry you to the top. Increase the amount of the covering good soil to say two inches. Put on lid. Operation is finished, all in one go. Lime or wood ashes may be added to vegetable matter, if desired.

If your collecting is rapid and enough material is available to complete another Composter, say in a week or two, then remove Composter or dismantle, cover the heap—which will be left standing in a nicely shaped compact state—with black polythene, placing a loop made with ordinary fencing wire over it and pushing down until the loop rests on the ground.

These covered heaps can be left thus or if you wish to hurry things they can be mixed and recovered with polythene, be sure now and then to check these covered heaps as to their moisture content.

If your collector is full and your Composter is empty, REPEAT, REPEAT, REPEAT.

THOSE SUBSCRIPTIONS

Some members may be a little tardy in renewing their subscription for the current year. It is of assistance to Branch Secretaries if these are paid promptly and if the subscription has not been paid it should be paid without undue delay. Why not pay two years' subscription by forwarding the sum of One Pound (£1).

Municipal Composting and the Results

by The Editor

Municipal Composting is NEWS! In many parts of the world more and more cities and towns are now abandoning wasteful, costly, incineration or landfill schemes and embarking on Composting their garbage and sewage. Admittedly it is often not through choice but necessity, although the trend is there just the same.

In this article we describe the Composting plant at Leatherhead, in England. Dr. S. P. Abraham, President of the South Canterbury Branch, visited Leatherhead during his stay in England last year and we are indebted to him for providing the information necessary to prepare this article.

Leatherhead, which has been making and selling Compost processed from its wastes and sewage for some twenty-five years was one of the first municipalities to embark on such a scheme in those days. It was the first town in England to install a Dano bio-stabiliser.

In the early days the refuse was placed in open pits or open bays. The Compost produced was of fair quality and found a ready sale; this has been the story ever since—never has there been any problem of disposing of the mature Compost.

Today Compost making at Leatherhead has become mechanised and a Dano bio-stabiliser is used. This plant is designed to deal with an estimate ultimate population of 45,000 people with an input of some 9,000 tons of crude refuse per annum, although this latter figure can be exceeded, dependent on the hours of operation. A loan of £73,000 was raised to cover the cost of the scheme.

The buildings are of steel framework and brick and comprise a refuse reception building, separation, salvage and baling building linked to a final separation building by the Dano bio-stabiliser.

The refuse is deposited by the refuse collecting vehicles into a reception hopper with a capacity of 55 cubic yards provided with a plate feeding conveyor belt to ensure an even flow of refuse. The tipping beam is 25ft. in length.

The refuse then flows past a bottle picking platform to a rotary screen for the extraction and separation of dust and cinders. The fine dust passes through the small perforations in the drum and can be taken by a conveyor belt and added to the refuse if and when required. The rotary screen has perforation ¼in. diameter in the first half of the drum and later the perforations are 1in. This opening allows clinker up to 1in. to pass through together with odd bits of potato peelings etc., and this falls into a hopper and is carted away by truck for filling. The remainder of the contents of the drum then pass on to the conveyor belt where two or three people stand picking out salvage in the way of rags, tins, etc.

Recovered materials, such as rags, glass and non-ferrous materials are deposited in chutes leading to bins on the ground floor for any further sorting before sale. Tins are baled by a mechanical press. Waste paper is baled separately.

Prior to the tailings entering the stabiliser the ferrous materials are removed by a magnetic separator and deposited to bins on the ground floor.

The refuse tailings from the conveyor belt are discharged with fine dust to the stabiliser which rotates slowly. As the refuse enters the stabiliser sewage sludge is injected by pump. The stabiliser, which is 74ft. in length and 9ft. in diameter, is kept substantially filled, the mixed materials moving slowly towards the outlet end.

During the process, which takes about 5 days, the materials are evolved as Compost by fermentation and the self-grinding and abrasive action obtained by the mass of materials in rotation. During this process air is introduced via several air valves on the longitudinal axis of the stabiliser, by a small air pump.

The material, by the bio-chemical action and temperature rise, is reduced to an innocuous friable material and is then conveyed to the final separation building.

The Compost is separated from the inert matter by passing through ¾in. and ⅜in. screens. An "egaliser" built in between the screen outlet and the Compost conveyor from the fine screen outlet and the Compost conveyor from the fine screen rejects such inert matter as glass, nails, etc.

It is anticipated that some 4,000 tons of Compost will be produced annually. Investigations are being made into the desirability of installing a small manually fed bagging machine.

Disposal of the main production under contract is now being investigated. (The Compost from the Dano plant at Edinburgh, was disposed of in bulk at £1 a ton, and sold by the man who marketed it at £4 per ton spread.)

Compost usually does not have a high N.P.K. reading, its value lies not so much as a fertiliser but its effect on the soil to which it is applied. It gives life to inert soils and the moisture retaining content is greatly increased; being darker in colour it attracts the heat of the sun and so warms up earlier.

Municipal Compost from the Edinburgh plant which has three Dano plants with a capacity of 210 tons input a day, has been given several tests and we publish below reports received from the farming community.

AREA—EAST LOTHIAN

Soil Structure Mainly Sandy Loam

Considerable encouraging results in this area over the past season on all root crops and brassicas. Due to the nature of soil structure, Dano Municipal Compost was found to be extremely valuable as a binding agent during dry periods. Moisture retention in soils dressed with Compost considerably superior to undressed soils. Outstanding results achieved with lettuce and cabbage dressed with Compost and which were marketable before undressed crops.

Potatoes dressed with Municipal Compost showed marked increase in tonnage per acre. Increases showed in number and size of tubers and a recent inspection of potato pits of Compost-grown potatoes showed them to be healthy, free from blemish, and in fine marketable condition. Also noted is the increase in demand by the public for Compost-grown potatoes against potatoes grown with artificial manures. An interesting report was further received from a farmer who reported a field of turnips, grown with Municipal Compost, which was sold completely as shopping turnips. The crop was clean, well formed, sound and free from mildew.

Extensive and comprehensive experiments and trials are now underway on a small holding leased by this firm at Drem, East Lothian. A set programme has been drawn up by officials of the College of Agriculture covering a five-year crop rotation, applicable to East Lothian to be carried out on this holding.

CONCLUSIONS AND COSTS

General reaction by the Farming Community is, economically, Municipal Compost is far superior in obtainable results against bought-in artificial or farmyard manure. The point may be enhanced owing to the firm operating a complete delivered-and-spread service, guaranteed to the customer's satisfaction. They acclaim the unquestionable value to the land derived from the Municipal Compost and the manner in which the Compost is easily assimilated into the soil. Our personal observations on Municipal Compost are best expressed by the satisfaction of repeat orders continually being received from customers.

MY BACK GARDEN

by a Dunedin Composter

Recently I had a conversation with the Editor about back gardens and he suggested I should give a description of mine. So here it is.

Every person who is fond of gardening loves to visit the gardens of other people and I am sure that there are very few gardens from which they cannot learn something, even if it's only some little gadget to make work a little easier.

My section is barely an ⅛-acre and on it I have the house with floor space of 1350 sq. ft., a workshop 24ft. x 14ft. and a fowlhouse 12ft. x 8ft. There is only enough ground for a small garden. From halfway down the section there is a sharp incline to a small stream which runs through the bottom of the section. This incline I have terraced into 4 level sections, with concrete walls and steps, which makes it easier for working. The clay I had cut out of the bank I threw down to the bottom. That is now 2ft. of rich loam and will grow anything. It is made up of Compost and the ashes out of my wood and coal range. For 40 years I have not put out an ash can for the council to take away. No doubt that will surprise most readers, but it is a fact.

Fowl Manure and Ash

I first came to make use of the ash when I cleaned the dropping board of my fowl house each morning. I would spread the ash over the fowl manure to keep down the flies, then in the autumn I trenched the clay and put this Compost of fowl manure and ash in the trench. Within a few years I had a lovely loam. I might add that we burn quite a lot of wood in the range, and the ashes would help to improve the ground.

I found coal ash was only harmful if it was just dumped on the ground. If it is spread as you would spread sand, I found it helped to open up the soil. I would never advise anyone to put coal ash in their Compost heap as it would have a toxic effect on the bacteria. I have a stack of Compost on each terrace to save labour. No fertilisers or sprays or manure of any kind (with the exception of fowl manure) has ever been used in my garden.

The paths are of asphalt edged with bricks set in concrete, saw tooth fashion, and so much for the layout.

Small fruit: black currants, raspberry, red currants, gooseberry, strawberry, boysenberry and banana passion fruit—small lots of each.

Grafting

Large fruit: plums (2 varieties), apples (3 trees), on these trees I have grafted 10 different kinds on one, 11 kinds on another, and 4 on the other—25 grafts altogether. The first ripen at the end of February (Irish peach) and the last in July (sturmer). Two of these trees are trained espallier fashion, on each side of the path. This way means less room needed for the trees. I selected varieties to give colour to the garden. Red Jonathan is the variety of one parent tree and Peasgood Nonsuch on the other. Shot silk rose is trained to one side of the house covering about 12 feet. At the back of the house two roses (lemon pillar and a red climber) are entertwined to mix the colours. Along the west fence is trained a bush of "Paul Scarlet" (red) spreading 15ft. In the middle of the yard is a small lawn with about 2ft. 6in. border of annual and perennial plants, a Marian Manifold rose is trained alongside the path. On one side of the path to the shed is a stone wall about 2ft. high and hanging over this wall are pinks and cat-mint; behind these, perennial phlox (3 colours)), and at the end of the wall a fuchsia overhangs. On the west of the path is a border about 8ft. wide and on this is growing a flax (variegated), a Buddlia (purple), two Standard roses, a flowering currant and Japonica (yellow). Yellow Irises, also purple bearded Irises, Laburnam tree, and a row of Hydrangeas is near the front of the house.

Coming in from the front gate, the

path curves round to the front door. At right of gate, Chrysanthemums (yellow, bronze and red), and at the back of these purple Cinerarias. On the front of the path, an edging of Polyanthus and in the middle a purply red Hydrangea, and nearby a red Kaka Beak (Clianthus), then a row of ferns in front of fence. Along the fence on the west side of the house. there are four varieties of gooseberries with ferns growing round the root. A dark purple double-flowering Lilac tree. At the western corner of the back of house is a macracarpa tree and around the base I have put about 18in. from the bole, a circle of brick edging ,in it is planted flowers and bulbs also a clematis (montana) which has climbed well up the tree and out to the sunny side. Back of this is a large Laburnum tree. A lovely picture when out in bloom. Lower down the fence is covered over with berberis and Ivy. Then another Laburnum followed by a clump of bamboo, from which I get my garden canes, also from the Buddlia I get good long garden stakes up to 10ft. and sometimes 12ft.

The first terrace starts from here, with a 2ft. bed containing a Crab Apple and Irises with an edging of Ixias and Nerines. There is a path of flat stones along front of bed. In front of path a sun deck 9ft. x 12ft. of concrete blocks set crazy fashion, a small glasshouse with a grapevine (hamburg) a small strip of garden for vegetables. Then a drop of 8ft. to fowlhouse and yard.

My Compost material is first dumped in fowlyard and the fowls give it a good mixing and it is well on to Compost before I put it into bins. Alongside fowlhouse there is a large clump of Red Pokers then a marshmallow tree. This tree acts as a windbreak, also lilac bush and an apple tree while nasturtiums hang over a 7ft. stone wall to the third terrace. Here are rhubarb, strawberries and vegetables, a concrete wall retains this terrace and along the top are five large gooseberry bushes. All my gooseberries are of the dessert kind. On the lowest terrace is a plum tree (Greengage) and a hedge of Elderberry on one side and Olearia on the other while along the boundary a small stream runs. The area is used for small fruits and vegetables.

I am a lover of birds and to encourage them to come into my garden I've planted berry-bearing trees and shrubs. At the present moment I am looking out of the sunroom window whilst writing this and I can see two Mockies, six Blackbirds, four Starlings, dozens of Waxeyes, and quite a troop of sparrows, a hedge sparrow and two Finches. Last summer I counted 56 Goldfinches on the clothesline.

I give the credit to my trees being free from insects and grubs to the birds. For 12 months they work for me and I do not begrudge them the fruit they eat. If a gardener does not protect the fruit and small seedlings he should not complain about the birds helping themselves.

I notice the humble house sparrow spends a lot of time on the rose bushes when the green aphis appear. I have planted ferns in all shady places as they always look fresh and green. I also have a yard square for a nursery bed, in which I strike cuttings. When pruning the roses I always put some of each kind in to strike. The young plants make nice presents for friends.

The growth that comes up of its own accord (weeds) commonly classed among the garden pests, finds a welcome in my garden, especially the chick weed. I call that plant "The Gardener's Barometer", for when it looks good and healthy, fit to eat, then you can be sure the soil is in good heart. It breaks down quickly in the Compost stack. A big percentage of my Compost is of weeds.

My garden is like a patchwork quilt, made up of many pieces. It has given me hours of pleasure, especially when I've been away for a few days, and come home to "My Back Garden".

●

Members are invited to contribute articles to be published under the heading "My Back Garden".

MEDICAL RESEARCH and the FLUORIDATION OF WATER

(from Page 6)

It seems highly probable that the present day craving for sugar would largely disappear if a more physiologically satisfying diet were available, for research during the past few years indicates that there is some chemical regulation of taste by the thyroid gland.

If sugar must be used so lavishly there is no real reason why its present highly purified white form should not be replaced by less refined products with their natural additives of dietetic value.

Our understanding of nutrition is elementary but research into agricultural practice shows, quite definitely, that an assessment of the biological and biochemic relationships that exist in nature as much more conducive to comprehension than is present-day research.

There are literally hundreds of food preservatives and dyes used at the present time to make food look attractive, to give it a long shelf-life in the shops and to make it a better commercial proposition. Each control, so used, is selected to make our food difficult to assimilate by the moulds and bacteria that would normally feed on it.

Preservatives are very largely protoplasmic poisons depriving these organisms of enzymes, vitamins and other factors essential to their metabolism and starving humans at the same time of like factors. Some of these controls have been found to be carcinogenic; others are suspect.

Apart from dental caries, only 13 per cent of the population of this country (England—Ed.) is free of discernable physical defect and 80 per cent of the population is said to be vitamin deficient—a deficiency for which the synthetic vitamin pill is no remedy.

Let us be wary when we are told there is no evidence of ill-effect when yet another control is added to our diet. It is wrong to test for toxicity alone for, before this becomes discernible, the body has been robbed of many of its important accessory food factors. The comparative crudeness of diagnosis is conveniently overlooked when such statements are made.

Controls there obviously must be when dealing with masses of people herded together in a civilisation in which the human population ecologically speaking, has attained plague proportions, but surely the time has come to reduce the need for them by better agriculture and more skilful handling and distribution of food, rather than to be ever adding them on nothing more logical than the immediate "cause and effect" principle.

At present we are content to treat symptoms, and by so doing we alter the pattern of morbidity. But while the general environmental stress of our civilisation remains outside the adaptive capacity of the human body to harmonise with it there will be disease.

Fluoridation cannot be regarded seriously other than just one more compromise and an expediency reflecting a comfortable policy.

[This article has been abbreviated. The italics are mine.—Editor.]

HUMAN NUTRITION

Human nutrition, in the words of a great Australian physiologist, Sir Stanton Hicks (a vice-patron of the Compost Society), is the flow of soil nutrients through the living tissues of plants and animals to mankind. Wholeness and freshness are clearly vital to its efficient functioning. But the modern urban housewife who appreciates this truth, and who tries to get high-quality whole fresh foods for her family has an almost superhuman task!

—Margaret Brady, M.Sc.

Health Food Recipes

Supplied by Miss O. ROSCOE

NUT ROAST

1 cup minced walnuts (fresh from the shell), 1 small cup mashed potatoes, 1 slice of bread, 1 onion, parsley, carrot, 1 egg, teaspoon marmite and vegie salt.

Put all ingredients through the mincer, bread last, and mix in egg and marmite. Place in greased dish, add small nobs of butter on the top. Cover with butter paper and bake in moderate oven 1 hour.

GRAVY

Nob of butter and marmite on vegetable stock. Thicken with wholemeal flour.

MOCK CHICKEN

1 cup milk, 3 eggs, 2 large onions, mixed herbs.

Cut onions finely and brown in a little butter. Add to milk, eggs and herbs. Place in buttered casserole, with sliced tomatoes on top. Bake in pan of water in moderate oven. Very tasty in sandwiches, plain or toasted.

POTASSIUM BROTH or CLEANSING BROTH

2 quarts water, 3 cups finely cut celery, 3 cups finely grated carrots, 1 cup cut spinach, ¼ cup cut parsley, 2 large onions cut finely. Comfrey leaves instead of spinach, or both. Vegie salt or celery salt.

Put finely shredded vegies in cold water, bring to boil slowly in about 20 minutes. Allow to simmer for 15 minutes. The food value is in the liquid and not in the pulp. Strain and add Vegisalt.

FISH

Place fish in pan, sprinkle with herbs, add a little milk, and bake.

Fish steamed and served with parsley sauce (wholemeal flour).

LIMA BEANS

Soak overnight, cook and add a tomato sauce. Also nice cold, with salad.

SOYA BEAN SAVOURY

1 cup cooked Soya beans mashed, 2 eggs, 2 tablespoons grated onion, ½ cup mashed potatoes, salt to taste, 1 tablespoon Rissolnut, 1 tablespoon peanut butter, ½ cup oven breadcrumbs.

Mix all ingredients together adding egg. Place in casserole and bake 1 hour in moderate oven in pan of water.

SALAD DRESSING

Place 2 cups water in shaker, add 2 tablespoons skim milk powder, 1 tablespoon raw sugar and 2 tablespoons cider vinegar and shake well.

APPLE SWEET

Place grated apples, chopped nuts and sultanas or raisins. Juice and rind of an orange, 1 tablespoon honey in casserole. Heat through and serve with whipped cream.

NATURE'S PROTECTIVE COVER

Without the intrusion of man, nature protects and preserves the soil by a cover of forest, shrub and grass, with the animal life they support, when dead, rot and are once again restored to the soil as soil-food, once again thereby to enter the cycle of life. Again and again the process is repeated. The material of life passes from one form of life to another, but whatever temporary form it may assume, it is fated again to return to the re-creative power of the soil.

Soil is not lost or injured in the natural process. The balance of life and death is eternally preserved. The vegetative cover of hill, slope, valley, and plain, which re-creates itself, protects the soil against the heat of the sun, the beating and rush of heavy rain, and the scouring of the winds.

—G. T. Wrench, M.D., in "The Restoration Of The Peasantries".

MARATHON WALKS ON A FRESH FRUIT DIET

In Paddington General Hospital, where she was resting after her 373 miles' walk from Edinburgh to London, Dr. Barbara Moore, the now-famous marathon walker, talked about her ideas for perfect health and longevity, writes Marion R. Harris in "Here's Health".

"People," said Dr. Barbara Moore, "eat too much—far too much—but not nearly enough fresh fruit."

Her own diet consists largely of fresh fruit—especially oranges—honey and nuts. It is the fresh fruit in her diet which helps her to keep her obvious energy and vitality and her wonderfully smooth skin—a complexion so clear that it would be the envy of many girls half her age.

The basis of Dr. Barbara's ideas for longevity, is that by reducing the amount of food she eats to an absolute minimum, she slows up the metabolism (i.e. the rate at which her body lives) and will therefore live very much longer than is normal.

A stringent diet like this may be a little too drastic for most of us who are content to let nature take her course so far as longevity is concerned but, for general health and good looks, we can all benefit from some of Dr. Moore's ideas on fruit in our diet, especially at this time of the year when we all tend to feel a bit sluggish and dull.

Cutting down (as she suggests) on sticky, starchy foods and substituting lots of fresh fruit and vegetables will not only cure the "winter droops" and clear that muddy look our skins sometimes get from too much rich food, too little fresh air and not enough exercise, but put a new sparkle in our eyes and a new gleam on our teeth.

Regarding this latter point, the juices from the fruit help the saliva clean away tiny particles of food from between the teeth which often can't be reached by ordinary brushing and mouth washing.

Drink orange juice before breakfast or instead of soup at lunch time and add lots of fresh fruit to your daily diet. Finish every meal with fresh fruit and have a piece of fruit last thing at night and you, too, will have a clear, baby-fine complexion and sparkling teeth when you reach fifty-six, plus the energy the whole world, at the moment, must truly envy!

On Thursday, 4th February last, Dr. Moore completed her 1,000 mile march from John o' Groats to Land's End.

This marathon march took 23 days. There were 20,000 people to greet her at the finish and to watch her drink a glass of carrot and lettuce juice. Afterwards, she had Cornish cream on a lettuce leaf.

On such a diet, Dr. Barbara Moore had defeated snow storms, floods and gales. Now she plans a possible 3,000 mile trek across the United States!

Dr. Moore's theory that, by reducing her rate of metabolism, she will live longer, has now been presented to the whole world as a sure maxim for healthy living.

Critics may sneer — but facts are facts!

CAN AFFORD TO CHEAT!

"People think that those who conscientiously guard their nutrition are dull food fads and misery-mongers. On the contrary, they are the gay ones who can afford to cheat for once in a while without any ill effects!"
—Dr Fred T. Millar, U.S.A.

ORANGES AND LEMONS

To make a wonderful pick-me-up, beat together the juice of one orange, one lemon, one raw egg and one teaspoonful of honey.

DON'T WASTE THE HEAT

by H. S. STEVENS, Richmond, Nelson

We are told that Nature abhors a vacuum—it is also true that a Scotsman abhors waste. Did it ever occur to you that there is a woeful waste of heat from our Compost stack, especially in the winter when heat is at a premium.

For some years now, about the middle of May, I have filled a fair sized stack and sealed it down with soil or sawdust in the usual way. Within a day or so the sealing material is pleasantly warm to the touch. I then take 2 seed trays—fill them with the usual seed Compost—sow a packet of lettuce seed in them and place them on top of the warm Compost inside the stack, replacing the cover in the usual way. Within 48 hours the seeds are showing through. I then remove the cover, replacing it with a sheet of polythene, which is tacked onto a very light frame.

In another 2 days the trays are green with the young plants. I then get enough trays to cover the entire surface of the "making" Compost, pricking the little plants out into them at the rate of about 30 per tray.

It is possible to get as many as 1000 plants from one packet of seed (costing about ninepence).

These plants are ready to plant out in the open in the very early Spring —I plant mine in July.

The advantages of this method are—first a one hundred per cent strike, the little plants are warm, snug and growing right through the cold of Winter and get a flying start in the Spring without any check.

The heat in the stack is pretty well gone by planting out time and the plants require very little hardening off.

This method is, of course, equally successful with other kinds of seeds, and is out on its own for raising flower seedlings for Spring planting.

A TRIBUTE TO A MAN OF VISION

Major P. H. Johnson (deceased) who presented Pioneer Park, some acres of Native Forest to the people of South Canterbury, was indeed a man of vision as well as a valued member of the Men of the Trees.

Some months ago some Memorial Gates were opened in his honour and one of the principal speakers, Richard St Barbe Baker, in the course of his remarks, said:

"The Aim of the Men of the Trees is to create a universal tree sense and encourage all to plant, protect and love trees everywhere. When Major Johnson joined the Men of the Trees he was already converted to the idea of forest conservation. He was already living up to the ideals embodied in their Charter. He regarded tree-planting and forest conservation as a touchstone of true citizenship. He was a lover of his fellow men, and perhaps that was why he was a lover of trees. He realised the importance of handing on our tree heritage for others to enjoy. With the Men of the Trees he appreciated not only the recreational value of the bush, but he was convinced of the importance of protecting the native forest for its so-called indirect benefit; soil protection and all that means.

Benefits

"The indirect benefits of trees are many—Indeed we cannot live without trees, for they are essential to water and water-table conservation, prevention of accelerated erosion, air purification, healthy soil, supply of humus and minerals, creation of climate, provision of shelter, the feeding of man, beast and bird, the beauty of the Earth, as well as the supplying of timber and wood pulp."

Questions and Answers

Conducted by G. H. LISS, F.R.I.H.

A South Canterbury member asks: "What is/are the natural predator(s) of the Codlin Moth? I prefer not to use sprays, but what can I do to ensure reasonably Codlin-free fruit?"

There are two kinds of the parasitic insects we are looking for: (1) the Diptera or true flies, and (2) the Hymenoptera, which are wasplike insects with very narrow waists and two pairs of wings; they are most important in maintaining the balance of nature. Some of these predators lay their eggs on the victim's body. When the eggs hatch the grubs soon force their way through the caterpillar's skin. Others lay their eggs on the foodplants, so that plant and egg are consumed together. The eggs will hatch in the victim's intestines. However, the parasites enter they remain until fully fed, which is when the whole interior of the host has been consumed.

Unfortunately, the number of useful predators and beneficial insects rarely remains stable and great variations may occur from year to year. The number of individual insects in any pest species is generally much in excess of the number of predators and the rate of reproduction of the former is generally higher. Very often the predators don't get going in full force until some time after the pest insect does so. By that time a lot of the damage will be done. Biological pest control is still in its infancy and we have a lot to learn yet. It appears that with grease bands, rings of sacking or corrugated cardboard, careful destruction of affected windfalls and careful scrutiny of stored apples, a lot can be done. Repeated spraying with derris is said to give some measure of control, although derris is not an accepted spray for codlin. Arsenate of lead, although effective, is not acceptable to the organic grower for obvious reasons. However, before long, there may be a non-toxic organic spray available and a lot of research is going on to find out more about biological methods of pest control.

●

THE APPLE'S WORST ENEMY

The Codling Moth (Cydia pomonella L.) is one of the commonest and most serious pests of apples. Most of the worm-eaten apples found during the picking season are due to the activities of its larvæ.

The adult moth (which is a brownish-grey in colour with a copper-coloured patch near the end of each forewing) appears from the end of October until the beginning of January and lays its eggs singly on the young fruits, leaves or twigs. These hatch out in a week or ten days and the larvæ bore into the fruits near the point where they are attached to the stem (or sometimes through the side) and feed on the core and surrounding tissues.

Within three or four weeks the larvæ are fully grown and then measure about half to three-quarters of an inch in length. At this stage they are easily recognised by their pinkish or creamy-white colour, their brownish heads and their eight pairs of legs.

When fully fed they bore through the side of the fruit, fall to the ground, then hibernate as cocoons in cracks or crevices in the bark of the tree or beneath rubbish nearby. The following spring they pupate in the cocoons and from the pupæ emerge new adults to start the cycle once again.

CONTROL—Bands of sacking or corrugated cardboard wrapped round the trunks of the trees in mid-January will trap many of the larvœ which may then be destroyed.

(please turn to page 29)

What Insecticides Do To Our Soils

A soil expert's research report underscores the harmful effects of insect poisons to plant growth and the land.

Each year, Americans spend about a half billion dollars on insect control and dump over 140,000,000 pounds of chlorinated insecticides on to the soil. What are these poisons doing to our land and the life it supports? asks a writer in "Organic Gardening and Farming."

James B. DeWitt of the Fish and Wildlife Service says: "These poisons are cumulative in action; that is, they are not passed off with other body wastes, and effects of repeated small dosages, or of a continued exposure, may equal those produced by a single, large dose. Since they are chemically stable, they do not break down after dusting into harmless compounds, and their poisonous effect continues for a considerable period. The manner in which they are used exposes both birds and fish to possible direct contact with the poisons or to indirect contact though foods such as insects which have been killed by the poisons."

Effect on Soil Fertility

Some soil scientists have undertaken research to find out the effect of sprays on plant growth and soil fertility. Following is a summary of a report by Charles F. Eno, Associate Soil Microbiologist at the University of Florida on "Chlorinated Hydrocarbon Insecticides: What Have They Done to Our Soil?" which shows that the build-up of poisons can reduce crop yields:

"The productivity of a soil is seriously threatened when the rate of addition of toxic substances is higher than their rate of breakdown to non-toxic constituents, and when additions have reached the point where the soil no longer dilutes them to a non-toxic level.

"In this regard, particular concern has been expressed about the chlorinated hydrocarbon insecticides. The majority of these are decomposed slowly and therefore have the potential of increasing to toxic levels in the soil.

"Most of the chlorinated hydrocarbons, such as DDT, benzene-hexachloride (B.H.C.), lindane, Heptachlor and others, were introduced to agriculture about the close of World War II. Therefore, in some instances we have had at least ten years of experience with them in practice and in research.

"Almost without exception, use of these insecticides at the rates recommended for insect control have increased crop production. Therefore, from a short-time viewpoint, they appear acceptable for insect control.

"Let us now turn to the soil and see just how it is affected by this particular type of residue. These materials, for the most part, are only slightly soluble in water and have a low vapour pressure. These and other properties of insecticides render them quite resistant to decay.

In the case of DDT, for example, as much as 60 per cent of the insecticide has persisted in the soil three years after application.

"DDT and related compounds, such as methoxycolor, are among the most persistent, followed by dieldrin and toxaphene. Chlordane, aldrin, BHC and lidane are the least stable. Studies to determine the build-up of other insecticides in the soil are currently in progress.

". . . At the Main Station, Gainesville, a fine sand was treated with 25, 100 and 200 pounds per acre of actual heptachlor, chlordane, lindane, aldrin, toxaphene, dieldrin, TDF, DDT and BHC. The 25-pound rate is quite realistic in terms of the amount of insecticide ordinarily applied during one to five years. The higher rates may have indicated the effect of accumulations over a longer period.

"Black Valentine bean, a plant sensitive to chlorinated hydrocarbons, showed a reduction in root or top weights from all materials except heptachlor, methoxychlor and toxaphene when seeded two weeks after the insecticides were applied.

"In addition to the progressive decrease in top growth caused by increasing amounts of the insecticide, root development also was restricted. Essentially no secondary roots were produced at the 100-and 200-pound-per-acre rates.

". . . Soil microbiological data indicated that nitrification (the conversion of ammonia to nitrate) was reduced by some of the insecticides. Heptachlor, lindane and BHC were toxic to the nitrifiers after two weeks in the soil, but only BHC and DDT had significantly detrimental effects after one year. Most damage at two weeks and one year after application occurred with BHC."

Although Professor Eno concludes that "effects from normal usage of insecticides are not enough to markedly reduce soil fertility," he also observes that "in contrast to nature's organic waste, the materials with which man contaminates the soil are not only sometimes very toxic to certain forms of life but often relatively stable. Generally, the more resistant toxic material is to breakdown, the greater is its potential danger."

★ ★ ★

INSANITY — AFTER WORKING WITH INSECTICIDES

According to "The Lancet", a medical publication, Australian research workers have intimated that no less than sixteen cases of insanity have occurred among people working with organo-phosphorus insecticides.

These cases had occurred after the people concerned had been using these insecticides for periods of eighteen months and the symptoms remained for as long as six months after ceasing to use the organo-phosphorus insecticides.

INSECTICIDES' EFFECTS ON MAN

The possible effects of modern insecticides on human beings was beginning to worry scientists and health authorities, said Dr. Clifford C. Roan, professor of entomology at Kansas State University on arrival in N.Z. recently.

Insecticides remaining on crops after they had been harvested and prepared for consumption could be dangerous, he said.

Dr. Roan, a Fulbright research scholar, will spend 12 months with the Entomology Division of the D.S.I.R. at Nelson analysing the effects of insecticide on grass grubs. He is a specialist in insect toxicology.

As insect pests became immune to various insecticides, other poisons were being developed to deal with them, said Dr. Roan. These could have a serious effect on man, the ultimate consumer.

"ORGANIC" PHOSPHATE SPRAYS DEADLY

Recent newspaper reports report on the insecticide-spray deaths of three children mention "organic phosphate" sprays as being involved. I'm confused about the word organic as it is used in these news items, and I think other readers are likely to be uncertain too.

—from a question in "Organic Gardening and Farming".

A: Here, the term "organic" is used in the chemical sense. Chemically "organic' is an adjective describing a compound which contains carbon as an essential ingredient. Coal-tar derivatives are one example of these chemicals. Biologically, "organic" is an adjective pertaining to, or derived from, a living thing. It is in this biological sense that we use organic in almost all instances. When you read about "organic chemicals" you can be sure that these are just as dangerous.

Insecticides Found in Food

"The widespread use of D.D.T. and other insecticides is endangering New Zealand's markets overseas and there is need for drastic action to be taken," the chairman (Mr H. J. Leaman) told the annual meeting of the dairy produce section of the North Otago Federated Farmers .

"These insecticides have been spread on farms and market gardens throughout New Zealand, often on the advice of officers of Government departments who should have known better," said Mr Leaman. "You can imagine how pleased the margarine manufacturers in the United Kingdom would be to read in the press that New Zealand butter had been found to contain D.D.T. This is a possibility we must guard against."

Referring to the recent banning by the United States agricultural authorities of a consignment of New Zealand meat because it was tainted by chemical substance, Mr Leaman said he regarded the use of insecticides as a serious danger to the marketing of meat, dairy produce, fruit and even honey overseas, and it was imperative that the high prestige of the Dominion as a primary producing country should be maintained.

Mr Leaman said the position could be safeguarded only by the complete cessation of the use of insecticides in New Zealand.

"There is no need to waste time talking about research into insecticides. This has already been done overseas by authorities of world renown, and their findings show how deadly are these insecticides," said Mr Leaman.

"The measures taken so far here are only 'playing' with this hazard to our exports and also to the health of our own people."

In support of his contentions, Mr Leaman instanced what he termed "the sharp rise in hepatitis" since D.D.T. was introduced in 1945.

Mr Leaman is President of the North Otago Branch of the Compost Society.

●

"When Dr. I. J. Cunningham, assistant Director-General of Agriculture, addressed the Dominion meat and wool conference he requested that we impress on our members the necessity for control on the use of DDT," said Mr Hiatt, senior vice-president of the North Canterbury Federated Farmers. "Pastures top-dressed with DDT must not be grazed for at least four weeks unless there has been heavy rain."

●

TB in Cattle

The Dominion conference of the dairy section had been told that the New Zealand figure for the incidence of tuberculosis in dairy herds was 10 per cent and 5 per cent in beef cattle.

QUESTIONS AND ANSWERS

Living in a country district with no sewage reticulation, I wonder if it is beneficial to add septic tank contents to the Compost heap from time to time?

The septic tank contents will certainly make a very good activator and assist in speeding up the Composting process. The resulting Compost, however, should not, in the writer's opinion, be used in the home garden for the production of food crops for human consumption. The cycle from man to plant and back again to man is too short. The proper cycle is from man to plant, from plant to animal, from animal to plant, and then only from plant back to man again. Compost from sewage for the production of animal food is acceptable, but not for food crops destined directly for human consumption.

Growing vegetables in sand: Enquirers should refer to "COMPOST", December 1959 issue.

FARM ANIMALS DIE FROM INSECTICIDE POISONING

Dieldrin, or aldrin, caused the death of 29 dogs last year in cases of poisoning analysed by the Wallaceville animal research station of the Department of Agriculture.

Out of 95 samples analysed in cases of suspected poisoning by insecticides, there were 38 positive diagnoses made based on the case histories and the recovery of insecticide from post-mortem material. Dieldrin or aldrin was also diagnosed as the poison in two cases of calf poisoning, two of fowls and one of fish. D.D.T. accounted for one poisoning of fowls, lindane poisoned pigeons, and B.H.C. and delnav were each involved in a dog poisoning.

Two cases of dog poisoning with dieldrin were associated with the spraying of the chemical around kennels to combat flies and fleas and four dogs were poisoned by dipping materials. Calves drank the overflow from a dip and others licked empty tins.

The fowls died after perching on sacks containing D.D.T. superphosphate and the pigeons were killed when the owner sprayed them with a lindane preparation. Other fowls were killed when the owner washed down his truck, used to transport drums of dieldrin, into the water race fowls drank from.

Overflow from a sheep dip was the probable cause of the fish being poisoned in a nearby stream. Though dieldrin could not be detected in 1 litre samples of the stream from which the dead fish were taken the flesh of the fish contained 3.8 parts a million of the chemical.

Wool and lambs' tails in dogs' stomachs presumably from docking indicated in two cases the wool was the source of dieldrin. One dog died after its kennel had been treated with a 30 per cent delnav spray.

—Christchurch "Press"

From the Editor's Mail-Bag

In the mailbag recently was a copy of the Autumn Newsletter of the North Otago Branch. This is the only Branch Newsletter to reach the Editor in recent months; those Branches that issue Newsletters please note.

The North Otago Newsletter is both newsy and informative and as is usual, well done. In addition to news items and the programme for the year, a spice of humour, a wholemeal recipe, it contains the following paragraph taken from the "Otago Daily Times":

"Soil Trace Elements Taint N.Z. Meat.—It is interesting to note, in reference to the above, that Canterbury Agricultural College has begun a study of the relationship between soil, pasture and animals."

●

From W. A. Narbeth, Essex, England: "For the past 14 years I have not sprayed my orchard. I have some 70 trees comprising mixed apples, pears and plums. I have less disease and fewer pests than when I used to spray. The orchard is grassed and the mowings are left on the ground. Whenever I have Compost to spare I place it in a circle a yard from the trunk of the trees."

Plants That Bite Back

There is trouble in the tobacco fields, and it isn't innocuous. I am speaking of a feud between the tobacco-growers and the cigarette-makers over the use of a new chemical called MH-30 maleic hydrazide), writes J. I. Rodale in "Organic Gardening and Farming:"

It is used to prevent the growth of suckers, which are shoots that spring from the roots of the tobacco plants, or from the stem near the ground. These suckers bring about a reduction in the weight of the tobacco leaves and mean less money for the farmer.

Formerly these suckers had to be removed by hand—a very tedious job. The new practice is to spray MH-30 over the whole field; it is absorbed through the roots of the plant, and presto!—no suckers, minus the drudgery that the tobacco farmer was previously subjected to.

But evidently the cigarette-makers want to take that chemical away from the tobacco-growers because it impairs the taste of the tobacco, causing a deficiency in its aroma. MH-30 seems to throw the tobacco leaf's chemical make-up out of balance, giving an unpleasant taste to the smoke. Leaves that contain MH-30 are also denser and hold more moisture, causing a reduction in the number of cigarettes that can be made from a pound of tobacco. The British tobacco-buyers are cutting down their purchases of American tobacco, due to the effect of MH-30, claiming that it produces "soggy, soft, badly filled, loose-ended cigarettes." Export shipments are falling because of it. Tobacco companies stand to lose millions of dollars. They are losing money also because sprayed tobacco gives fewer cigarettes per pound.

For the farmer it means less work and greater yield—while for the cigarette-maker it means higher costs and loss of business. Two attempts have been made to ban the use of MH-30, one in Congress and the other in the North Carolina legislature. Both attempts failed. In the case of North Carolina, the bill was killed by the U.S. Rubber Company, the manufacturer of this chemical. Its attorney testified that such a measure would make a criminal out of any North Carolina farmer who disagreed with the ideas of the tobacco companies.

Over 90 per cent of scientific opinion believes that smoking is a cause of cancer of the lungs, but please not that in this MH-30 tug-of-war, it is all economic. Not a word have the tobacco companies uttered that to add another chemical to the tobacco leaf could spell an additional health hazard. Now, if MH-30 is so powerful that it can throw the tobacco leaf's chemical make-up out of balance, what additional effect can this have on the smoker, besides causing cancer? Can it bring about some other disease?

There was a time when the farmer did not know about systemic sprays. He sprayed only the leaves of a plant to catch any unwary bug or insect egg that happened to be there. But with MH-30 he is saturating the soil with a solution depending on the roots of the plant to absorb it and to circulate it into every one of the billions of cells of the plant to produce various effects. It becomes systemic, or internal, rather than an outward means of combating the insect. In other words, feed the poison to the plant instead of to the insect.

Today, systemic-type sprays are used quite generally on food crops. In fact our "friend" MH-30 is used on potatoes in storage to prevent them from sprouting. You can be sure that much of this toxic chemical is absorbed into the interior of these potatoes and is being absorbed by people who eat them.

Importance of Earthworms to the Farmer

Perhaps the most insignificant, in size, but not in activity, product of Mother Nature on West Coast farms, as well as throughout the country, is the common earthworm (states a writer in "The Greymouth Evening Star").

In discussing the importance of the earthworm to the farmer, Mr J. M. Lockhart, Farm Advisory Officer for the Department of Agriculture, Greymouth, mentions the role of the earthworm in promoting soil fertility.

"Recently, a Kowhitirangi man, Mr Jack Marshall, drew my attention to an interesting phenomenon on his farm," said Mr Lockhart. "He has, in recent years sown down some of the paddocks at the back of his farm and though, after being well worked, they were sown down with good seed, and though they were top-dressed with plenty of lime and fertiliser, the results are poor, but parts of these paddocks, in contrast to the rest, carry a good pasture and these better parts are where earthworms are operating. These patches are increasing in areas as the worms spread.

"There is ample evidence from trial work and field observation that earthworms stimulate the growth of pasture plants. Some have more effect than others, for of the 110 or more native species and the 25 or 30 known introduced species, only two, each introduced from Europe, are really effective in stimulating pasture and crop growth," Mr Lockhart added.

"These are the casting worm and the dungworm, and it seems that in their absence high-producing pasture cannot be grown, nor can fertility be raised enough to grow satisfactory crops.

"A high-producing pasture can have under it up to a ton of earthworms per acre; these earthworms eat decayed vegetable matter and droppings and make the material in them available for plant growth.

Mr Lockhart continued: "I have seen quite startling differences in experiments comparing soil with worms as against soil without worms. The main difference was in water penetration. The wormed soil allowed water poured on it to soak away instantly, but the water lay on top of the other soil.

"The mixing and turning up of bottom soil layers is also another beneficial function of worms. We have all seen stones buried by worm action, and where there is a high worm population, this can take place in a surprisingly short time.

"The casting worm and the dungworm do not thrive in acid soils and if the soil is very acid they are not present at all. Thus one of the main functions of lime is to make conditions more suitable for earthworms. Indeed, you will get very little response from lime unless earthworms are present," he mentioned.

"Some years ago, publicity was given to the activity of a special strain of earthworms that were doing good work on a hill country property near Raetihi. The worm present there was wrongly identified and it has been found since that it is the common casting worm that is present on all our good lands. So if you wish to introduce good type worms into any area you will get the right sort by taking sods from any area where you see that they have left casts on the surface.

"Because West Coast farm lands occur in isolated pockets and because, until limed, much of the soil is too acid, there are quite a number of areas where these more active worms are not present, so it will pay anyone who is bringing in land to look for earth worm activity.

"A farmer should be specially suspicious where he is not getting the results he thinks he should. The transference of a few sods containing casting and dungworms will be well worthwhile where they are thought to be absent," Mr Lockhart concluded.—Sent in by R.H.

MULCH FOR HEALTHY TREES

In considering the use of mulches for fruit trees an understanding of the basic conditions under which trees have evolved and survived in nature to maintain their finest growth is essential. Our fruits thrive on soils which support our finest hardwood forests.

These finest forest trees grow under a natural mulch system. Each year's growth of leaves, as well as dying twigs roots, and the excrement and remains of microbe and animal are returned to the soil. By autumn, such material has been almost entirely taken into the soil by worms and other types of plant food manufacturers. Each year this uniform supply is provided and conditioned for use by the tree. Only abnormal climate or mechanical changes or insect pests and diseases upset the perfection of health and growth of such trees.

Under nature's shaded conditions insoak of rain and aeration of the soil are ideal; surface evaporation is low; the soil surface is moist except in severe drought.

It becomes evident to the horticulturist that the more closely he can approximate these natural conditions in his orchard the better the growth and health of his trees should be.

His experience demonstrates that fruit so grown have higher colour, longer keeping quality, bruise and drop less, and have the finest flavour and texture.

Mulch materials high in leachable nitrogen can supply quickly available plant food after soaking rains. Material low in solubles may not only contribute no immediately available plant food, but may, instead, take from the soil's meagre supply of nitrogen for use by organisms which at once start to break down the raw organic materials. Then, after several years, unless available nitrogen is supplied for the tree, or the food manufacturers in the mulch, the decayed mass may over-supply the tree with available plant food, causing over-stimulation.

Some of the oldest apple trees with a history of producing the largest crops of the highest quality, best-flavoured fruit, grow on soils having a high water table in the spring.

Fruit tree roots in such soils are:

1. Horizontal, and
2. Vertical.

The horizontal roots extend a short distance below the surface. It is through their fine feeding roots that nutrients are largely absorbed, and that air is obtained.

A moderate application of rich mulch each year maintains, in the better orchards, a mat of broken-down and breaking-down organic materials above the highest water level where rootlets from the horizontal roots can always find air above the highest water level, and prepared plant food in ideal form. When drought occurs, vertical roots grow down from the horizontal roots, following the lowering water table to supply the leaf surface with water. It has been demonstrated that, unless the rootlets of the horizontal roots can continue to function, the quality of the fruit declines.

It is evident that a proper mulch mat maintains a moist condition, except in very severe drought, by absorption of moisture from the air, by channelling the water from showers to the rootlets, and by causing granulation of the close-grained subsoil, thus permitting the passing of water upward.

Most horticulturists have observed the beneficial effects of mulches on light soils. Their effect on deep, natural orchard soils is often striking in the improvement of the quality and flavour of the fruit provided the mulches have been correctly used.

—"Fruit and Produce"

REDUCING EVAPORATION OF WATER

Although irrigation schemes are in operation in New Zealand and many farms now use forms of irrigation to boost production this country really does not suffer greatly from lack of water.

In South Africa and Australia, however, the position is somewhat different for there the farmer has to contend with the fierce tropical sun, and although the water may be stored the problem of evaporation can be serious. The following article reproduced from "Veldtrust" illustrates the position:

"As a result the water engineers are making every effort to keep the rays of the thirsty sun from evaporating the water they have stored. They have tried the Australian methods of spreading a film of hexadeconal, only one molecule thick, on the surface of the water. They have also tested foam plastic sheets on evaporation tanks, and one of them stood up very well to eight months of exposure. I understand that the engineers have now taken the bull by the horns—or would it be more appropriate to say 'the sun by the corona'—and have ordered a large area of this material to build up a floating disc on one of the circular pump storage dams near the new Onanjokua Hospital. The disc has been made only as large as the bottom area of the reservoir so that there would always be a rim of exposed water and oxygen will not be cut off completely.

Australian Successes

"The average annual rainfall over the whole of the Australian Continent is only 17 inches and the evaporation is very high, with the result that engineers have paid a great deal of attention to this problem.

"The latest reports on the results they have achieved by spreading a film of hexadeconal (cetyl alcohol) are quite encouraging. Mr A. L. Tisdall, the Commissioner of the State Rivers and Water Supply Commission in Victoria, Australia, recently said that theoretically there was no reason why the saving in evaporation should not be in the region of 55 per cent. In practice it had amounted to about 25 per cent. What is more, it had only been applied to areas of water up to two acres in size on which the waves would be small. He is very definitely of the opinion 'that it will only be a matter of time before an effective technique has been developed for large expanses of water."

CIRCLE OF FRIENDS

Old friends are always wonderful and some are priceless too,
But we should look around and try to cultivate the new;
Because the circle that we form by all the hands we shake
Surrounds the height and margin of the progress that we make,
And if our friends of years ago are all we have today
Then surely we have slowed our stride, and walked an idle way;
Whereas each new one helps to ease our struggle and our strife,
And every larger circle is a longer lease on life;
So let us keep the gentle friends that we have come to know,
But also let us do our best to let that circle grow.

FRUIT DRINKS ARE GOOD FOR COLDS

Any rise in body temperature requires an increase in both fluid and vitamin C intake. People suffering from infectious ailments generally have lower blood levels of vitamin C than healthy people on the same diet. Fevers use up vitamin C and it is important to give adequate supplies of this vitamin to all those who have either acute or chronic infections. It has for centuries been our practice to give fruit drinks to patients with fever. There are good scientific reasons for doing this. Lemon, orange, blackcurrant, and New Zealand grapefruit juices are all good sources of vitamin C.

From the Reader's Point of View . . .

Under this heading we are pleased to publish readers' viewpoints. No responsibility can be accepted for the ideas expressed and readers who disagree are invited to do so. Letters must of necessity be brief and we reserve the right to abbreviate, delete or not publish any matter considered unsuitable.—Editor.

●

APPRECIATION

Sir,

Enclosed is my subscription to "Compost." It is always a pleasure to receive the magazine and it seems to get better and better.

(Mrs) C. BROOKS.

2 Howard St,
Lindfield, N.S.W.

●

ENTON HALL CLINIC

In the January issue we published a story dealing with the Enton Hall Health Clinic, conducted by two New Zealanders in Surrey, England, Mr and Mrs R. Atkinson Reddell. The article brought the following reply:

Sir,

Indeed, the world is a small place and it was from an American reader of your COMPOST magazine I first heard our establishment had been reviewed in its pages.

I would like to thank you for kindly giving us space in your journal and at some later date we must give you a much better article on the organic husbandry side of our work.

Mrs Reddell is a very keen horticulturist and agriculturist and is responsible for the farming of our eighty acre estate, which is handled on organic lines. I must send you some photographs showing you the remarkable fertility that has been achieved through the "law of return".

We both teach, practice and demonstrate that health begins with the "living soil" and in this respect our institution is, perhaps, unique and has no equal in any part of the world.

Some time back I tried to get in touch with your magazine but had my letter returned through the dead letter office. If I can find it I will enclose it with this letter.

I would very much like to subscribe to your magazine and to this end I enclose a £1 note.

R. ATKINSON REDDELL.

Near Godalming,
Surrey, England.

●

HEALTH AND THE SOIL

Sir,

With rapid advance in materialistic way of life, even people whose calling is to watch over mental and physical development of younger generations do not seem to realise that human life and health are irrevocably tied with fertile soil and healthy plant life.

Certain interests, helped by science fiction hacks, through medium of the press, the radio, lead people into belief that our civilisation has reached a stage when artificial fertilisers, chemical food improvers, miraculous drugs and all sorts of gadgets can solve all human problems.

Although the sages in the ancient times stressed the importance of wholesome food on the health and the need to protect the soil from over exploitation—modern man does not heed this warning and puts his trust rather in pseudo-scientific propaganda.

There are quite a number of books explaining the importance of soil reclamation and reafforestation to meet the demand of rapidly growing world's population also the need to keep the soil, the water, the air and the food free from pollution and adulteration. Unfortunately the average intelligent person doesn't read these books, imagining that they are for specialists only.

G. O. FRANCIS.

BRANCH PROGRAMMES

WANGANUI

Meetings held on the second Thursday of the month at the C.G.C. Rooms, 115 Bell Street, at 7.45 p.m. Visitors welcome. Bring a friend.

OTAGO

Meetings are held on the SECOND WEDNESDAY of each month at the National Party Rooms, 125 High Street, at 7.45 p.m.

WEDNESDAY, 9th August:
Talk by Dr S. P. Abraham.
WEDNESDAY, 18th September:
Talk by Mr Richau.

HAWKE'S BAY BRANCH

Meetings on first Thursday in each month, except January, at 8 p.m. in the Old Folks' Association Card Room, Hastings.

AUCKLAND

Meetings: Horticultural Headquarters (The Chimes), 57-59 Symond Street, City, fourth TUESDAY, at 8 p.m.

TUESDAY, 22nd AUGUST:
Speaker: Mr G. A. Hutchinson, B.E., A.M.I.C.E. Subject: "Advances on Composting, Overseas and Local."

Field Day

SATURDAY, 12th AUGUST:
Visit to Beaumonts Nurseries. Fares 5/- return. Bus leaves from behind C.P.O. at 1.30 p.m.

SOUTH CANTERBURY

Meetings held in the Community Centre, George St., at 8 p.m.

WEDNESDAY, 2nd AUGUST:
Speaker: Mr Trevor Griffiths, "Trees and Shrubs".
WEDNESDAY, 27th SEPTEMBER:
National Council delegates present "Municipal Composting Developments".

October and December meetings: Second Wednesday.

NORTH OTAGO

TUESDAY, 25th July:
Mrs A. W. Curry . . . "Gardening in General."
TUESDAY, 29th August:
Mr P. Clarke . . . "Methods of handling Manures and Sheet Composting."
TUESDAY, 26th September:
Ladies night. (Possible visit of Nat. Pres. and Nat. Council Members.)
TUESDAY, 31st October:
Reserved.
TUESDAY, 28th November:
Film Evening.
DECEMBER: No Meeting.
1962.
TUESDAY, 30th January:
Mr H. J. Leaman: "Municipal Composting."
TUESDAY, 27th February:
Annual Meeting.

NAPIER

The next meeting of the Napier Branch will be held in the U.F.S. Hall at 8 p.m., on TUESDAY, 1st AUGUST.

UPPER HUTT BRANCH

Meetings are held at St. Hilda's Hall, Upper Hutt, on the first Tuesday of every month, except January, at 8 p.m. Visitors welcome. Members bring a friend.

WELLINGTON

Meetings: We meet at the Public Library Lecture Hall, Mercer Street, Wellington, on the **First Tuesday of Every Month** (excepting January), at 7.45 p.m. (There is supper afterwards, but meetings are not late.)

CANTERBURY

Meetings held each FOURTH THURSDAY in the Chamber of Commerce Hall at 8 p.m.

THURSDAY, 24th August:
"Fruit Growing by the Espalier System"—R. E. Betteridge.

Our Branches Report . . .

The 17th Annual Report of the Hawkes Bay Branch is as under:

The most important event during the past year was the Annual Conference and Meeting of the Society at Hastings. This Branch was congratulated by the President and the members' delegates for the organisation of the gathering, and also for the visit to the Compost Works at Roy's Hill. We wish to record our thanks to the Branches that made donations available to cover the cost of the Annual Meeting.

We wish also to express our thanks and appreciation to those kind people, our guest speakers, for addressing our monthly meetings. They are as follows: Films from the National Film Library, "Taken For Granted"; Soil Association "Cycle Of Life"; and Hawkes Bay Catchment Board's work in preventing erosion, shown by Mr Reg. Hunt through his projector; for a talk on the preparation of Compost for seed raising in trays and the system of preparing hard and soft-wood cuttings for rooting, by Mr Eric Keong; to Mr Bryan Taylor for showing slides of English gardens, and for the talk about his work in connection with Miss Constance Spry's gardens and floral displays; Mr Morgan, Manager, France House Boys' Home, Eskdale, for an address upon his successful method of composting Comfrey leaves and the use of Comfrey for medicinal purposes in the home; Mr and Mrs B. Chambers for again entertaining members with films depicting visits to Bavaria and to the Game Farms in Rhodesia, and to the Wildfowl Trust in England, managed by Mr Peter Scott; to Mrs Dorward for a talk on the "Wonders Of The Honey Bee" with films provided for her on that subject. Also included was an English Horticultural Film entitled "How To Dig"; Mr Donald Wilson provided the projector and showed the films.

Once again we had the pleasure of viewing films shown by Mr B. Chambers, as later in the year he entertained us with some beautiful shots of scenes in the Scilly Isles and the gardens of estates in Great Britain. Also included were films of a trip to the isle of Mauritius, and its Indian inhabitants proved most interesting.

With the resignation of our treasurer, Mr L. Bodley, owing to his projected departure from Hawkes Bay, our President, Mrs Epps, on behalf of members, thanked Mr Bodley for past services and presented him with a fountain pen. Mrs M. Roil was appointed successor to Mr Bodley and her acceptance of the office was appreciated by members.

A stall on behalf of the Compost Society was held at the Assembly Hall Flower Show in November. The number of financial members was maintained throughout the year, and with some enthusiasm from members, could easily be increased. A levy of two shillings per member to National Council was paid out of funds in hand. Raffles of towels presented by Mr Reg. Hunt proved quite profitable and helped to maintain a credit balance at the bank, supplemented by proceeds from the "Bring and Buy" table (which we hope will be better patronised and supplied in the coming year).

The following officers were elected: President, Mrs M. Epps; Vice-presidents, Messrs M. Rich, T. Townsend, L. Joll, G. D. Wilson and J. Edge; Secretary, Mr A. F. Butcher; Treasurer, Mrs M. Roil; Committee, Mrs A. F. Butcher, Miss D. Knapp, Messrs G. Roil, Zurcher and Offen.

The highlight of the evening was a most interesting and instructive talk by Mr T. Townsend who spoke on the topography and history of the Hawkes Bay coastline from Clive to Waimarama.

MRS M. EPPS,
Honorary President.

AUCKLAND

Our May meeting was well attended and many new members were welcomed. The competition stand looked most attractive with specimens of flowering shrubs and produce from the garden.

The President, Mr R. L. Thornton, opened a discussion on the Annual Show. It was suggested that the next time it be non-competitive. A show of hands proved that most of the members present were prepared to put in at least one exhibit.

The remainder of the evening was taken up in the showing of three very good films — "France Is A Garden", "Big Game In South Africa" and "Rival Worlds".

Pruning must be a subject dear to every gardener's heart, judging by the large numbers of members who came to the June meeting to hear a lecture by Mr Viney of the Department of Agriculture. This was given as a forerunner to a Field Day on pruning, when several members from the Dept. of Agriculture gave a practical demonstration in a local orchard.

With the aid of a blackboard and specimens of wood taken from peach and apple trees, Mr Viney proceeded to demonstrate in steps clear and easy to follow, the right way to go about the job. We were made familiar with the names of the tree parts and then shown first with stone fruits and later with apple and pear just how to ensure that we replenish the tree with new, vigorous growth.

A happy evening was concluded with supper and the answering of gardening problems from the question box.

—K. EDMONDS.

BLENHEIM

The Secretary, when in Ch'ch, visited Mr Betteridge, who was moving his chrysanthemums to the glasshouse just before the buds open when he gets better and longer lasting blooms. One pear tree on the espalier system is fruiting most abundantly. He has made use of every piece of land in his limited area, and is quite an accomplished Composter. If every member of our Society was as keen as these members, our movement couldn't help expand. A most interesting weekend was spent in Christchurch.

Film Evening

Mr Gascoigne, a member of our club, filmed part of his trip in Europe and the continent. The film in colour was well edited by Mr Gascoigne. His commentary was easy to follow which made us feel as if we were travelling with him. Kew gardens must have been at its best when filmed as they were extremely beautiful. He took us through Germany, Italy, Switzerland and other interesting parts which members said was the best privately produced film they had seen. Supper ended a most interesting evening.

At the May meeting, Mr Moore suggested that a Questions and Answers section be held at meetings and he offered to organise this. Mr Bate played a tape recording of Dr Guy Chapman's address at the Auckland conference.

On the way to conference the Secretary visited a cow farm about 20 miles from New Plymouth which would run only 18 cows 30 years ago. The farmers divided the farm into roughly 5 acre paddocks and applied an initial dressing of 2cwt superphosphate to the acre to bring back to production. He grazed the cows on a fresh 5-acre block each day, and after moving them to a fresh paddock would run the chain harrows over the previously occupied paddock. The whole circuit of the farm took 13 days. He now runs 70 cows, 22 heifers, 25 calves, a few sheep and pigs. He has not had any disease among his stock with the exception of a little mamitis in the early period.

Thirty-five members were present at the June meeting to hear a talk on soil by Mr Brian Hildrith, a scientist from Woodbourne Aerodrome.

Among other things Mr Hildrith said was that fungi is a class of plant with no chlorophyll (an example is mould on damaged citrus fruits—penicillin) seen in soil as thin white threads called mycelia. Mr Hildrith said there are many kinds of bacteria. One class requiring oxygen is known as Aerobic and others known as Anaerobic, requiring no oxygen.

Bacteria break down organic matter. These two classes are normally in balance, aerobic on the outside of soil granules and anaerobic inside. Without anaerobic bacteria it is almost impossible for most mineral elements to be made available to plants. Harmful bacteria are destroyed when brought into contact with anaerobic bacteria, and this happens when digging or ploughing. Anaerobes do produce toxic elements (plant proteins, for example, are broken down and formed into iron sulphides, and change it into sulphuric acid and iron sulphite—both poisonous to plants. However, these soon leach away.

Mr Hildrith claimed that Composting makes the best use of bacteria and the process is finished in the soil. Too much nitrogen is harmful as it may lead to locking up of other elements. Mr Hildrith explained the importance of trace elements.

—REG. WATSON.

NAPIER

The May meeting of the Napier Branch, over which Mr R. G. Martin presided, was addressed by Miss M. Spriggs, who spoke on "Round My Garden". She mentioned garden planning, recommending some flowers which gave good results when planted in groups, and mass planting. Plant preferences were explained, for example, pæonies do not like being disturbed and they should be supplied with animal manures, not artificials. The nerine also prefers the soil not to be cultivated. Salvia stands dryness and heat, and polyanthus will respond to applications of cow manure or bonedust.

Among the questions asked was a request for a list of shrubs, and Miss Spriggs recommended, among others, the bottle-brush, garrya elliptica, Japanese maples and luculia, as suitable for local conditions.

At the June meeting our delegate to the annual conference, Mr F. J. Darling, gave a resume of the business transacted, and the social gatherings. He told about the sewage station at Mangere, of a new type of Compost box, the development of Mt. Smart, of the success of Mr Ross who is working the Keyline system of cultivation on his farm. He gave a summary of the business transacted.

In the unavoidable absence of the scheduled speaker at the July meeting, a substitute programme was provided. This included the reading of extracts from magazines on such topics as comfrey, Compost, and the use of chemical fertilisers. This lead to an interesting discussion, and was then followed by a series of travel slides shown by Mr Martin.

—M. J. LEITH

NELSON

The Compost Society held a field day in Richmond, in March, by very kind favour of Mr and Mrs Stevens of Hill Street.

A large number of members and interested friends were present and Mr White, the President, and two helpers, Mr Keelty and Mr Yellowlees, made the Compost stack. Later members and friends had the chance to discuss the afternoon's work.

On the following Monday Mr Stevens reported to the president that the temperature of the heap was 160 degrees.

The "Garden Newsletter" (what to do and plant in the garden) created much interest at the well attended April meeting. Films dealing with garden subjects were shown.

A good attendance of interested members and friends joined us for the May meeting. Business was short and the garden newsletter was read. Mr L. G. White then introduced Mr Leigh, Superintendent of Reserves in Nelson, the guest speaker. He was most interesting, talking of trees, shrubs, flowers, insects and sprays. I feel members would very much like to hear him again.

—JOAN BANNISTER

SOUTH CANTERBURY

A well attended meeting of the above Branch was presided over by the president, Dr. S. P. Abraham, who delivered an address illustrated by films on "Nutrition and Physical Decay". This film was produced by the American Association of Nutrition, and was based on the researches and book of Dr. Weston Price, a leading authority on orthodontics.

Dr. Price, whose researches into orthodontics are internationally recognised, has been responsible for a world-wide survey of the food habits of human beings, from the Eskimos of Alaska to those of our own Maoris and also Europeans. He observed especially the dietary habits and the teeth of those whose manner of food production he studied. Those whose innate good sense and conservatism kept them to the ways of their fathers possessed excellent teeth, good wide dental arches and sound bone structure. Those who had adopted the devitalised and over-processed foods of the twentieth century were characterised by a narrowing, in some cases deforming, of the dental arches, narrowing of bone structure of body, congenital bone malformations, and a high susceptibility to T.B. In some cases faulty nutrition was responsible for Mongolism.

Dr. Weston Price's arguments in favour of a well-balanced diet, including plenty of sea-food, were upheld by the slides shown.

Dr. S. P. Abraham, South Canterbury delegate to the Annual Conference of the Society, held in Auckland recently, gave a comprehensive report on the Conference, and he stated that one of the striking features was the keen awareness of the necessity of composting town wastes.

The meeting concluded with a hearty vote of thanks to Dr. Abraham for his address and to Dr. Densem for the use of his projector.

—C. S. GORDON

HAWKES BAY

The June meeting of the Branch was held in the Old Folks' Rooms, Hastings, Mrs M. Epps presiding. Members and new members were welcomed.

Mr A. J. Butcher, who was delegate to the Conference, gave a very good account of same, also the highlights. Mr T. Townsend showed some very interesting overseas films which were enjoyed by all. A competition for the evening was won by Mr A. J. Butcher.

—M. EPPS.

LEVIN

The May meeting concerned itself chiefly with the discussion of gardening questions, previously handled by Messrs W. Reynolds, A. Graham and J. D. McKay, who provided answers and led the subsequent discussion in which all present took part. The topic which aroused most interest related to the growth and care of grape vines and fruit.

At the June meeting and following a knowledgeable pruning demonstration by Mr L. W. Snowsill, the whole subject of growing of gladioli and the control of diseases and pests which afflict these plants, was presented by Mr J. R. Maunder, who illustrated his talk with coloured slides. During and following his talk, the speaker answered many questions which showed the keen interest of the questioners. Hearty votes of thanks were accorded the speakers.

—D. HARTSTONGE

OTAGO

Mrs N. L. J. Nelson presided over the June meeting.

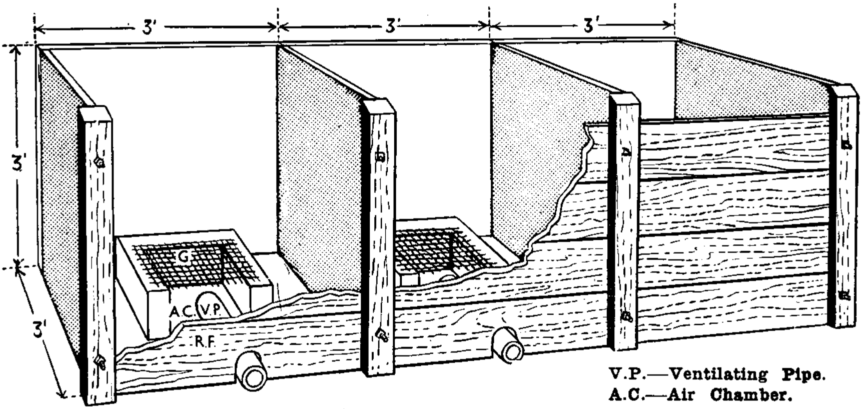
Mrs Nelson gave a general description of the conference, and the agenda. Mr G. W. Herrick described the work being carried out at Mt Smart Park, and also the technique and operation of the Mangere Sewage works.

A further talk was given by Mr McKenzie in the Infra-red Ray analysis of vitality and colours in plant substances.

—L. PAICE.

Published by the New Zealand Organic Compost Society and printed by D. N. Adams Ltd., Tattersalls Lane, Christchurch, New Zealand. Registered at G.P.O. Wellington for transmisson as a magazine.

MOD-EN-AGE **Multiple Compost Bins**



V.P.—Ventilating Pipe.
A.C.—Air Chamber.
R.F.—Removable front cut away to show interior.
G.—Grid covering air chamber.

Simple to erect; supplied complete as shown above. Erected at site if required at slight extra cost.

MARTIN ORMANDY LTD.
41 Riccarton Road - Tel. 80-335 - CHRISTCHURCH.
V26

A HAPPY HOLIDAY

in a Home away from Home

all the comforts of a hotel,
plus the advantage of a home!

Spend your winter vacation with us and relax in pleasant surroundings in Motels or Cabins. Your comfort is our problem, so leave it to us and have a carefree holiday.

TELEPHONE 67-703, Christchurch, or write or call, **ARANUI MOTEL and HOLIDAY CAMP,** (Late Campers' Park) **307 Pages Road, New Brighton, Christchurch.**

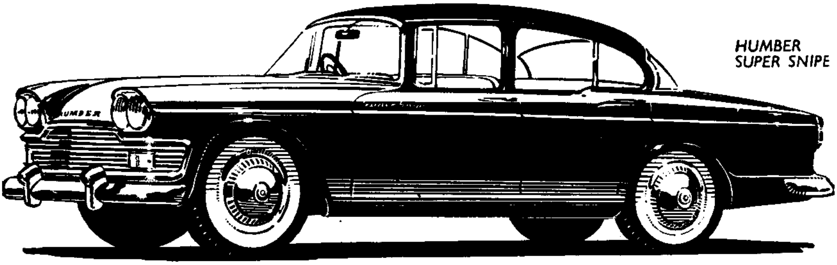
H. F. Sewell, proprietor, extends a special welcome to all composters

Why WAIT for a New Car?

HUMBER – HILLMAN – SUNBEAM

with

overseas funds or shares owned prior to 1st January, 1959



RESTRICTIONS EASED

Cash, stocks, shares, securities or similar funds owned prior to 1st January, 1959, in **any** country in any currency, including AUSTRALIA, are now eligible for a no-remittance licence.

In addition, overseas funds, such as the following, can be used without restriction as to the date they were acquired. A part deposit from any one of them could buy you a wonderful new Humber, Hillman or Sunbeam.

1. **Legacies or income from deceased estates, etc.**
2. **Salary, wages, royalties, etc., earned outside New Zealand. Compensation monies.**
3. **Insurance policies maturing outside New Zealand.**
4. **Funds or assets of immigrants left in their native countries.**
6. **Bona Fide gifts from relatives.**
7. **Proceeds of overseas racing and lotteries.**
8. **Interest or dividends or bonus shares derived from investments held prior to 1st January, 1959.**

Husband and wife may secure a licence each based on approved funds held by either.

SEE US NOW. Only part of the purchase price is required in overseas currency. With some models the overseas currency required is **as low as £294.** The balance is payable in N.Z. currency, on easy terms if desired. No trade-in required.

Britain's finest range of Quality Cars

Saloons, Convertibles, Hard Tops, Station Wagons.

N.Z. Distributors: TODD MOTORS LTD., Licensed Motor Vehicle Dealers, Wellington.